MAGAZINE OF BUILDING

architectural **forum**

UNIVERSITY OF HAWAII LIBRARY
APR 2 '53

February 1953

Urban traffic forum How can cities save themselves from strangling in their own congestion? (p. 110)

New thinking on parking garages Main street's ugly duckling puts on the architectural dog, offers a profitable answer to the parking problem. A reference article with seven case studies (below and p. 120)

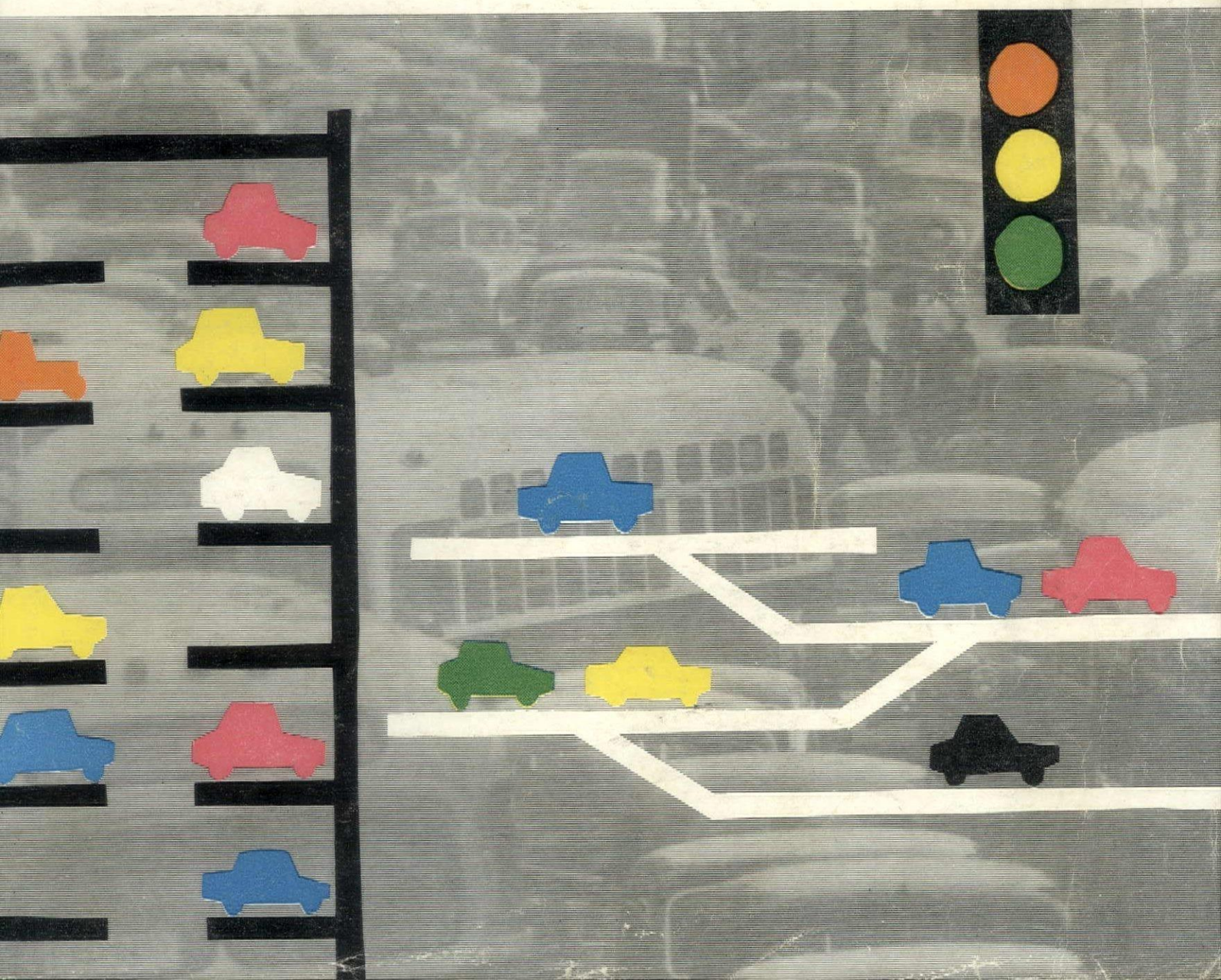
Drive-in bank From the design of gas stations and tollgates: a new building type (p. 107)

Building engineering Why does the space frame promise greater design freedom and lower costs in the new era of building? (p. 150)

School-hospital-guardhouse Design of Philadelphia's newest civic building is a triple tonic for juvenile delinquency (p. 101)

Our new crystal towers Critical appraisal of the diverse uses of glass in the buildings of Frank Lloyd Wright, Eero Saarinen, Mies van der Rohe and Skidmore, Owings & Merrill (p. 142)

64956





Double Duty Beauty . . . for walls and furniture



Walls in the Governor's Reception Room, California State Capitol (upper photo) walls, banquettes, chairs and bar of the Engineer's Club Cocktail Lounge, Dallas, Texas (lower photo)—beautified with Kalistron, made by Kalistron, Inc., and distributed by U. S. Plywood Corporation and U. S. Mengel Co.

● Beauty that decorates with a wide variety of rich, brilliant colors and fine-grained textures.

● Beauty that lasts because it's made to stay fresh and clean for years.

That's the beauty of covering with Kalistron . . . a surface sheet of clear VINYLITE Brand Plastic with color permanently fused to the underside, and backed with flocking.

Maintenance is lowest ever because it's easiest ever to clean. It resists water, grease, soap, cleansers, alcohol, even acid and alkali solutions. VINYLITE Plastic sheeting is flexible, readily worked. It drapes beautifully without stretching, stays soft and comfortable.

This combination of long-lasting beauty, easy handling, and economical upkeep makes upholstery and wall coverings based on VINYLITE Plastic perfect for schools, restaurants, institutions, offices, homes. And, the same exceptional qualities are found in tile and continuous flooring, and in hundreds of other products for defense and basic industries made of VINYLITE Plastics and Resins.

For more information and a list of suppliers, write Dept. OW-14.

Vinylite
BRAND
PLASTICS

TRADE MARK
BAKELITE COMPANY

A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.



Already these Hauserman Movable Walls have SAVED $14,000... and there's more to come!

● Twelve years of profitably and quickly meeting changing office space requirements . . . and over $14,000 saved in redecorating costs. That's the amazing record of Hauserman *Movable* Walls at Bankers Life Company, Des Moines.

As estimated by Bankers Life Company officials, even with their efficient air conditioning system, ordinary tile and plaster walls would have required redecorating at a minimum of every five years . . . at a cost of over $7,000 each time. With Hauserman *Movable* Walls, however, periodic washing has kept the lifetime finish new looking . . . good for many more years of use . . . and re-use . . . without repainting.

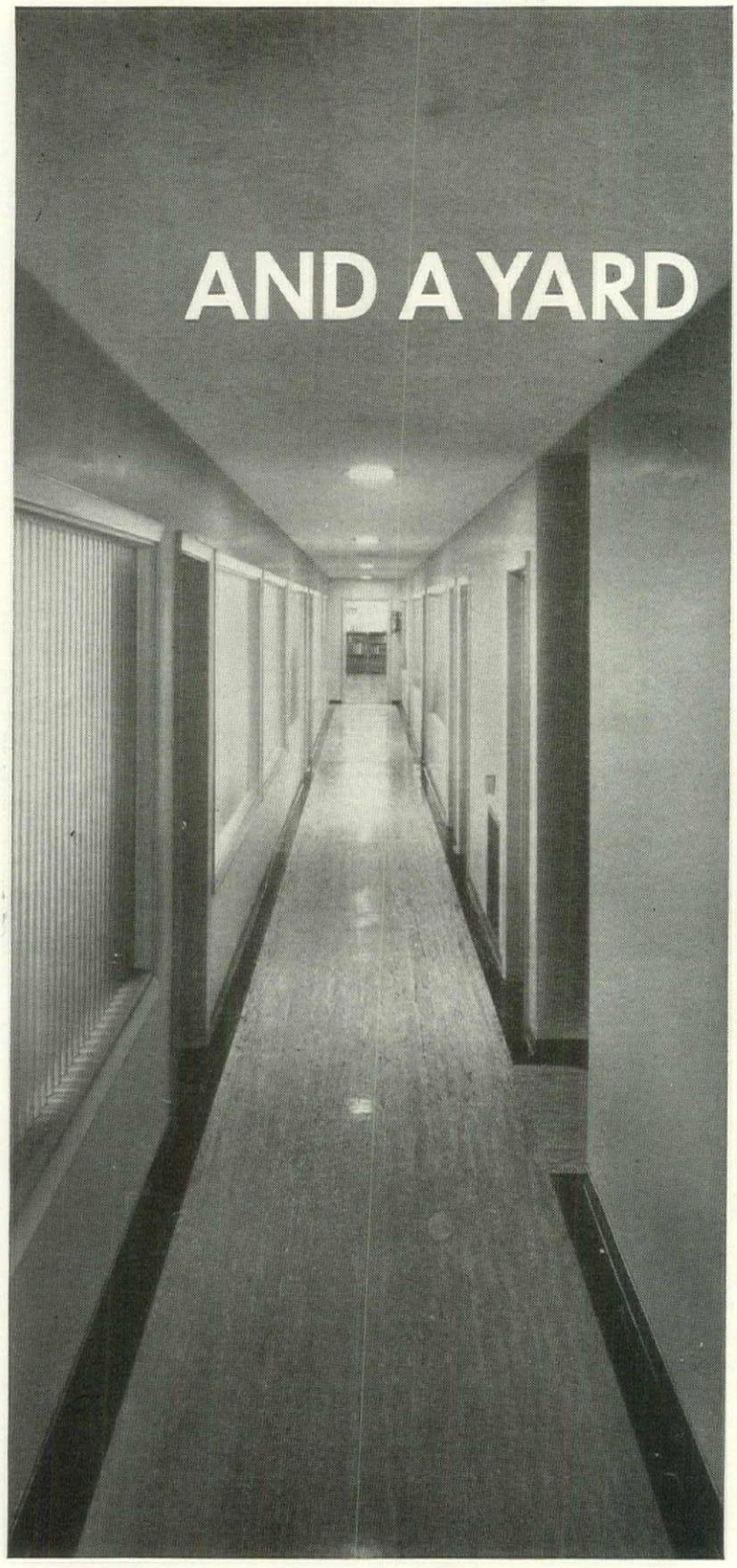
The benefits of eliminating costly time-wasting redecorating are obvious. Yet, that is just *one* way that any building, *including yours,* can profit from modern Hauserman *Movable* Interiors.

HAUSERMAN®
Movable Interiors

OFFICES • SCHOOLS • LABORATORIES
HOSPITALS • INDUSTRIAL PLANTS

WRITE FOR DATA MANUAL 53! Just off the press . . . a completely new 92-page guide for architects. Contains complete technical details, stock sizes, general instructions and specifications on all types of Hauserman *Movable* Interiors. The most comprehensive collection of facts and technical information on movable interiors ever assembled. Write for your FREE copy of DATA MANUAL 53 today. The E. F. Hauserman Company, 7129 Grant Ave., Cleveland 5, Ohio.





It's All Rubber—

AND A YARD WIDE!

Goodyear Rubber Flooring is the one best accepted rubber floor covering that comes in full, 36-inch rolls. It cuts down "piecework," saves installation time — gives long-wearing economy where foot traffic is heavy!

FOR clean-cut corridors, wall-to-wall carpeting effects and wide, sweeping borders working smartly with patterned tile centers—you can win your client's praises by specifying Goodyear Rubber Flooring.

Years from now its beauty, durability, ease of maintenance and quiet resiliency will still be giving proud testimony to your good judgment. There are numerous installations well over 25 years old that are still in excellent condition.

Goodyear Rubber Flooring is available in yard-wide rolls—especially suited for commercial and industrial applications running into thousands of square feet.

Specify Goodyear Rubber Flooring—in 9″ x 9″ tiles or continuous rolls — at your flooring dealer's or through your contractor.

For complete specification data on this leader, write: Goodyear, Flooring Dept., Akron 16, Ohio.

GOODYEAR Rubber Flooring

by the Tile • by the Roll • Best—because it lasts!

We think you'll like "THE GREATEST STORY EVER TOLD"— every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE— every other Sunday—NBC TV Network

THE MAGAZINE OF BUILDING

architectural **forum**

FEBRUARY 1953

Published by TIME Incorporated

EDITOR-IN-CHIEF Henry R. Luce
PRESIDENT Roy E. Larsen
EDITORIAL DIRECTOR John Shaw Billings

THE MAGAZINE OF BUILDING
ARCHITECTURAL FORUM

EDITOR AND PUBLISHER
P. I. Prentice

EDITORIAL CHAIRMAN
Douglas Haskell, AIA

EXECUTIVE EDITORS
Joseph C. Hazen Jr.
Suzanne Gleaves

ART DIRECTOR
Paul Grotz

ASSOCIATES: Edward Birkner, W. C. Bixby, Peter Blake, Gurney Breckenfeld, James P. Gallagher, Marilyn Grayboff, Jane Jacobs, Mary Jane Lightbown, Walter McQuade, Carl Norcross, Vernon Read, Richard Saunders (Washington), Ogden Tanner, Arthur McK. Stires, Stephen G. Thompson, Arthur Watkins.

ASSISTANTS: Rosalind Klein Berlin, Gwen Hodges, Henry T. Martin, Alice O'Connor, Adam Ooms (Los Angeles), Dorothy Stone O'Shea, Olive Taylor.

ART STAFF: Associate Directors, ARCHITECTURAL FORUM: Amnon Rubinstein, Ray Komai; HOUSE & HOME: Madelaine Thatcher, Nina Rittenberg. Assistants: Lilly H. Benedict, Martha Blake, Paula K. Obsatz, Mary Villarejo. (In military service, Jan V. White.)

MARKET RESEARCH DIRECTOR: Arthur S. Goldman.
CONSULTANTS: Miles L. Colean, Ruth Goodhue.
PRODUCTION MANAGER: Lawrence W. Mester.

GENERAL MANAGER
Robert W. Chasteney Jr.

ADVERTISING DIRECTOR
George P. Shutt

ARCHITECTURAL FORUM is published monthly by TIME Inc., Time & Life Building, 9 Rockefeller Plaza, New York 20, N. Y. Yearly subscription payable in advance. To individuals or firms (and their employes) engaged in building—design, construction, finance, realty; material distribution, production or manufacture; government agencies and supervisory employes; commercial and industrial organizations with a building program and their executives; teachers and students of architecture and engineering; libraries, professional clubs, society and trade associations connected with the building industry; advertisers and publishers; USA, Possessions, Canada, Pan American Union and the Philippines, $5.50; elsewhere, $12.00. To those not connected with the Building Industry: USA, Possessions and Canada, $7.00; elsewhere, $17.50. Single copies, if available, $2. All copies mailed flat. Copyright under International Copyright Convention. All rights reserved under the Pan American Copyright Convention. Re-etered as second class matter Oct. 1, 1952 at the Post Office at New York, N. Y., under the act of March 3, 1879. Copyright 1953 by TIME Inc.

TIME Inc. also publishes TIME, LIFE, FORTUNE and HOUSE & HOME. Chairman, Maurice T. Moore; President, Roy E. Larsen; Executive Vice President and Treasurer, Charles L. Stillman; Executive Vice President for Publishing, Howard Black; Vice Presidents, Allen Grover, Andrew Heiskell, J. A. Linen, P. I. Prentice; Vice President and Secretary, D. W. Brumbaugh; Comptroller and Assistant Secretary, A. W. Carlson; Manager, MARCH OF TIME Division, A. R. Murphy.

VOLUME 98, NUMBER 2

NEWS 41

EVENTS TO COME 64

LETTERS 72

HOSPITAL—SCHOOL—GUARDHOUSE 101

Youth detention center in Philadelphia combines the functions of all three in a handsome civic building. Architects: Carroll, Grisdale & Van Alen.

FISH-BOWL BANK 107

York National moves from a trailer to an all-glass drive-in building in Old Orchard Beach, Me. Architect: Carl Koch.

URBAN TRAFFIC FORUM 110

A panel of 44 transportation experts write a prescription for saving the centers of cities from strangling in their own traffic.

NEW THINKING ON PARKING GARAGES 120

An analysis of the economic and design factors which have raised the garage from the lowly level of the stable to today's booming building type, including two ramp garages (Downtown Auto Park in Minneapolis by Larson & McLaren, architects; and Hecht's Department Store in Arlington by Abbott, Merkt Co.) and five mechanical garages (Parkomat, Pigeonhole, Bowser, Rotogarage and Alkro).

OUR NEW CRYSTAL TOWERS 142

A critical appraisal of the diverse uses of glass in four office-building landmarks: Frank Lloyd Wright's Johnson Wax Tower, Mies van der Rohe's 860 Lake Shore Drive Apartments, Skidmore, Owings & Merrill's Lever House and Eero Saarinen's General Motors Technical Center.

MODULAR OFFICE BUILDING 146

Meat Board headquarters in Pretoria, South Africa is planned on a 3'-5" unit for flexibility and raised stilts to provide parking space. Architect: H. E. Stauch.

BUILDING ENGINEERING 150

Trend toward space-frame structure presages a revolution in architecture—a symposium featuring the experiences and opinions of England's Structural Engineer Felix J. Samuely and a score of other leading engineers and architects.

REVIEWS 188

PRODUCT NEWS 192

TECHNICAL PUBLICATIONS 208



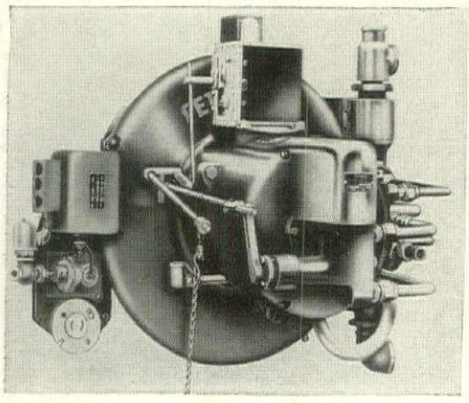
NO MATTER WHAT THE DEMAND

THERE'S A

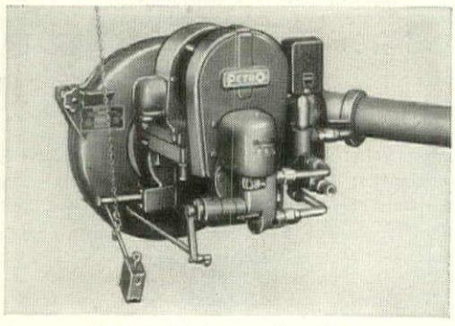
Petro

INDUSTRIAL OIL BURNER

to handle it!



Shown above Model WA for use with cold oil.
Also available Model W-AH for use with heated oil.



Model G-W Combination oil-gas.

Cut Fuel Costs with Heavy Fuel Oil

Petro rotary oil burners are built for firing all types of boilers up to 600 boiler horsepower, and also for many other industrial applications. They are designed to burn the low-cost, heavy fuel oils with complete reliability, Petro oil burners slash fuel costs two ways—they burn the *lower priced oils*, and they do it with *outstanding efficiency*. Fluctuating steam demands are answered automatically with Petro modulating flame control. Thousands of owners will tell you that Petro Industrial Oil Burners are fuel savers, labor savers and trouble savers, and their dependability is traditional.

Your heating contractor can tell you about Petro burners. Turn to "Oil Burners" in telephone book yellow pages. See catalog in Sweet's Architectural File, or mail coupon below.

see our catalog in S ARCHITECTURAL FILE or write for copy

INDUSTRIAL—COMMERCIAL—RESIDENTIAL
An oil burner for every need

PETRO

50 Years of Leadership in
Automatic Heating and Power Equipment

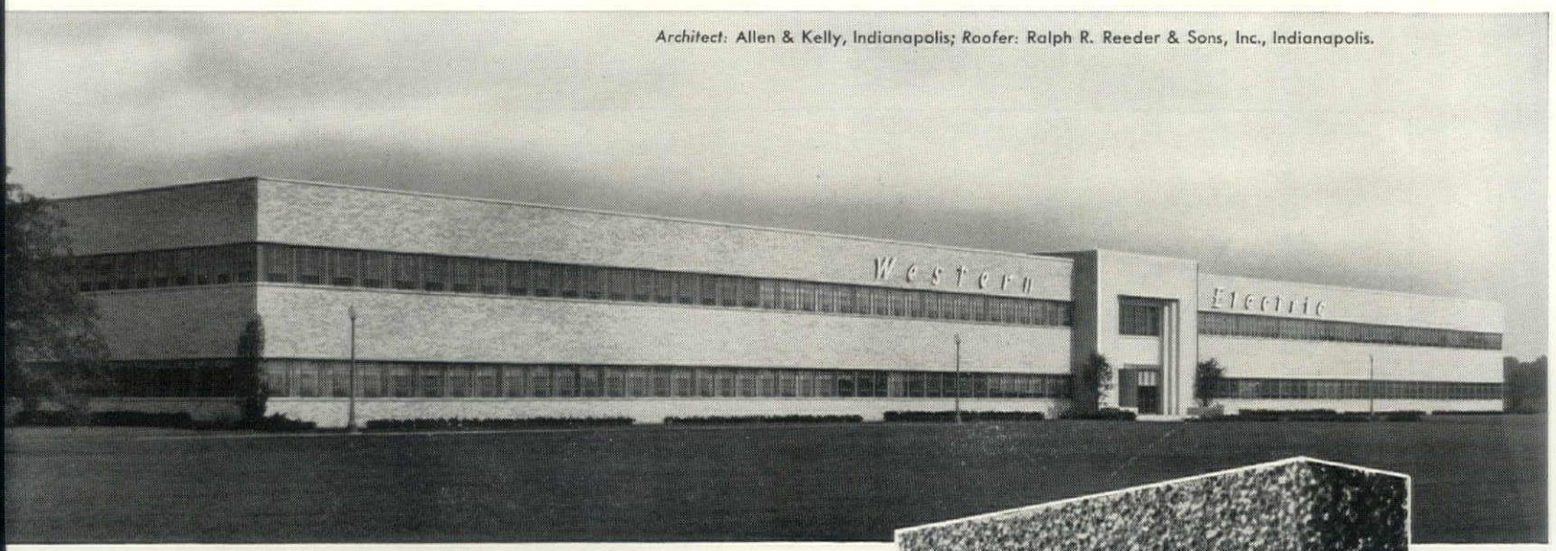
PETRO, 3198 W. 106th St., Cleveland, Ohio.

Please send me the Petro catalog of commercial-industrial oil and gas-oil firing equipment.

Name_____

Address_____

City_____ State_____



Architect: Allen & Kelly, Indianapolis; *Roofer:* Ralph R. Reeder & Sons, Inc., Indianapolis.

How *Western Electric* added overhead and saved money

Impossible? Not at all, for Western Electric Company is finding *that* a very profitable formula at their new Indianapolis telephone plant . . . the world's largest. By *adding* FOAMGLAS insulation *overhead* (on their 20 acre roof), they are *saving money* over and over.

The use of increasingly popular steel deck construction had made insulation on the roof mandatory. *Architect J. Lloyd Allen* reports, "The selection of



J. Lloyd Allen

FOAMGLAS®

insulation for this roof not only cut heating and comfort conditioning costs immeasurably, but has given Western Electric the added advantage of constant insulation efficiency. Only FOAMGLAS has sealed glass cells that are impervious to the moisture that causes ordinary insulations to lose much of their effectiveness."

It will pay you also, to specify FOAMGLAS, the *Stay-Dry* insulation for *your* insulation . . . for normal temperature buildings, refrigerated structures or piping and equipment. Please use the coupon so we can send you a free sample and further information.

PITTSBURGH PC CORNING ®

PITTSBURGH CORNING CORPORATION
PITTSBURGH 22, PA.

see our catalog in S ARCHITECTURAL FILE or write for copy

Pittsburgh Corning Corporation, Dept. D-23
Pittsburgh 22, Pa.

Please send me free sample and booklets on use of FOAMGLAS for:

- ☐ Normal Temperature Buildings
- ☐ Refrigerated Structures
- ☐ Piping and Equipment

- ☐ Send engineer to help with specific problem
- ☐ Advise nearest source of supply

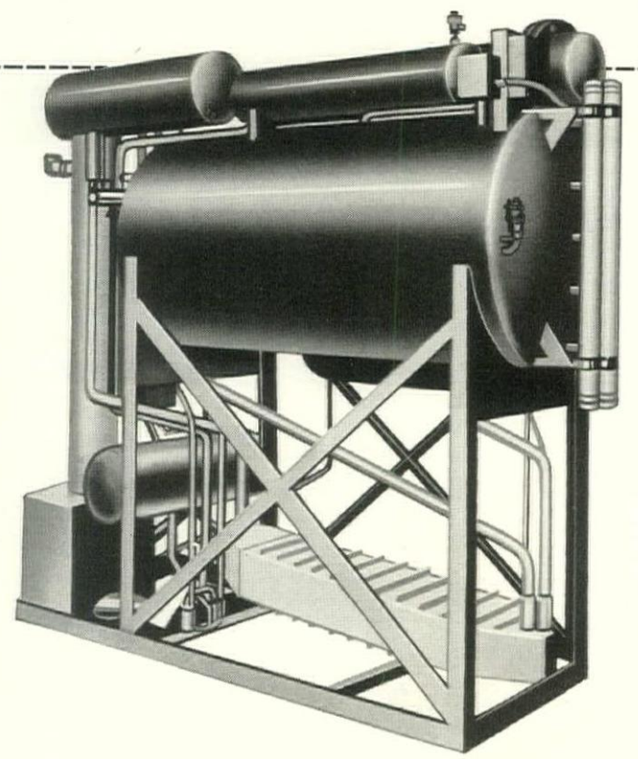
Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

Solve cooling problems with waste heat or low-cost steam!



FLEXIBLE SERVEL WATER CHILLER

meets all 3 cooling needs

1. AIR CONDITIONING



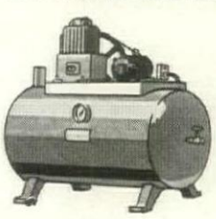
The adaptable Servel 25-ton Water Chiller—operating on any source of steam—uses water as the refrigerant to provide economical temperature and humidity control in large buildings and factories. No expensive duct systems are required!

2. PROCESS COOLING



Because it operates with no moving parts on the time-proved absorption refrigeration principle, you can depend upon the Servel 25-ton Water Chiller for continuous high-efficiency cooling of liquids for various manufacturing and formulating processes.

3. INDUSTRIAL PRECOOLING



You can use the unusually flexible Servel 25-ton Water Chiller to precool air for increased capacity and improved performance of air compressors and internal combustion machines. The Water Chiller also serves other money-saving precooling purposes.

5-YEAR WARRANTY! Every Servel 25-ton Water Chiller is backed by a full 5-year warranty. Because it has no moving parts, the Servel Water Chiller operates quietly and without vibration. Add to these advantages its extremely compact size and light floor weight and you'll appreciate why it can be installed on any floor with most economical piping arrangement. May be installed singly or in multiple as required. Mail the coupon below today for complete information.

Servel

the name to watch for great advances in . .

AIR CONDITIONING ✓ REFRIGERATION

MAIL THIS COUPON TODAY

SERVEL, INC., Dept. AF-2, Evansville 20, Indiana

Please send me further information about application flexibility of the Servel 25-ton Water Chiller.

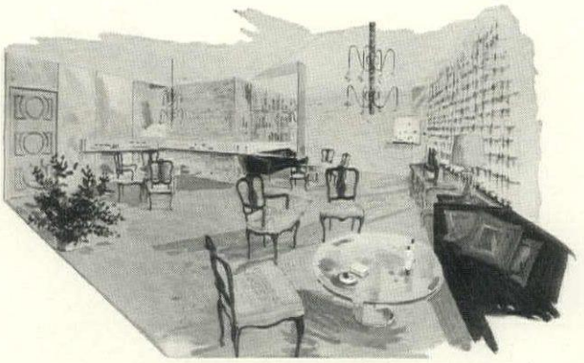
Name_____

Firm_____

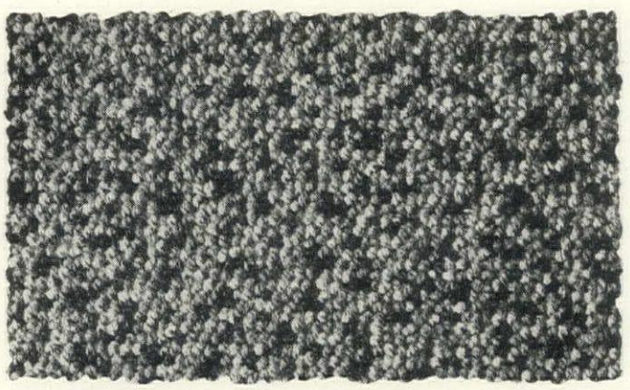
Address_____

City_____ Zone___ State_____

A flying trip through Lever House on those heavenly carpets by LEES!



A glimpse into Harriet Hubbard Ayer Buyers' Salon gives the visitor a feeling of fashion and feminine delicacy. The carpet is Lees Locksett in soft dusty pink.





Lever House, where Lees Carpets set the decorative keynote. Interior installations by the Contract Division of W. & J. Sloane. Raymond Loewy Corp., Interior Designers.

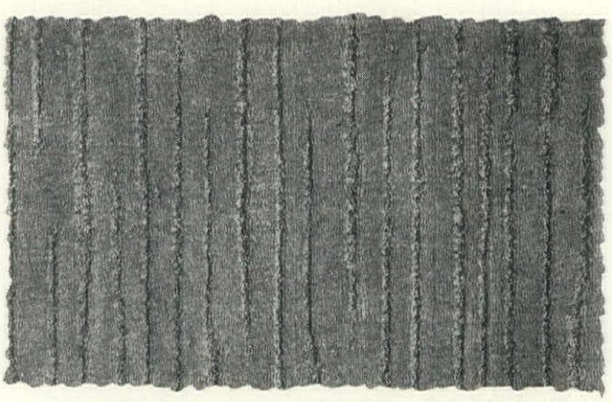
Lever House elects Lees! Engineered for tomorrow, Lees Contract Carpets make the perfect floor covering for Lever Brothers' spacious new glass-walled wonder-of-the-world! Here—air, light and perfectly co-ordinated color effects —open the door to a vast new architectural world. Lees Carpets fit perfectly into this great new design for industry. Specially constructed to withstand wear and steady traffic, they come in a wide range of colors, patterns, textures, and custom designs for special interiors. Send for specific information from James Lees and Sons Company, Contract Carpet Division, Bridgeport, Penna., or offices in principal cities.

Lees® CARPETS

JAMES LEES AND SONS COMPANY

BRIDGEPORT, PENNSYLVANIA

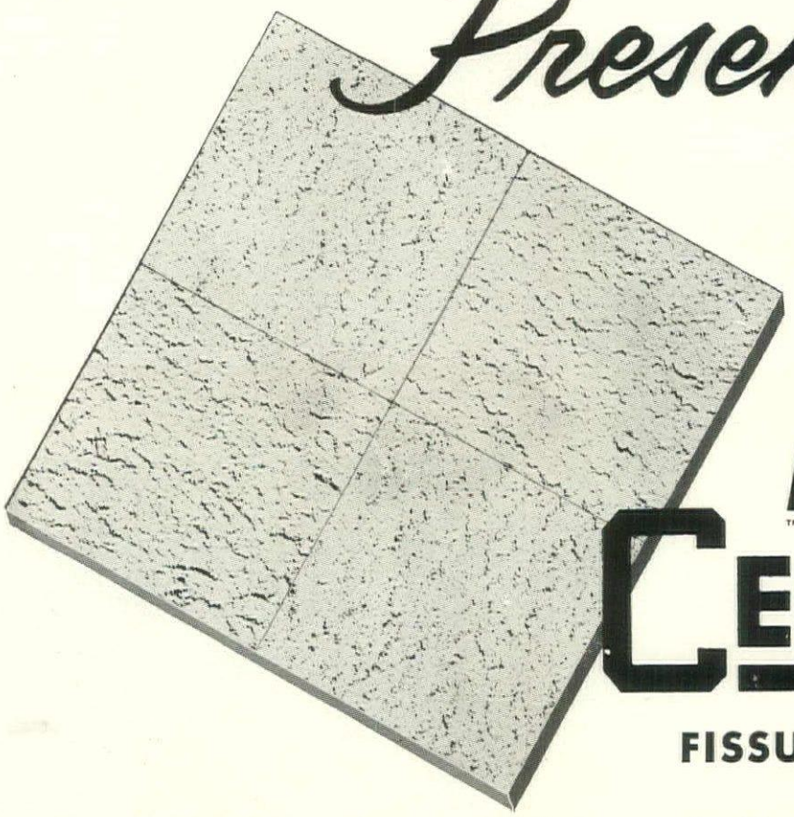
MAKERS OF LEES CARPETS AND RUGS



Gracious Glowtuft by Lees, an embossed effect Wilton carpet, spreads hospitality and gentle color over the broad expanse of the 21st floor reception plaza.



Presenting



a Sound Conditioning material that combines the beauty of travertine with high acoustical efficiency . . .

NEW ACOUSTI-CELOTEX TRADE MARK REGISTERED U. S. PAT. OFF. CELOTONE TRADE MARK

FISSURED MINERAL TILE

Here is the new, incombustible acoustical tile that combines outstanding acoustical qualities with a unique, travertine-like appearance that enhances any architectural motif—modern or traditional!

The most beautiful material of its type ever developed, new Acousti-Celotex CELOTONE has deep, irregularly shaped and spaced fissures that produce a pattern duplicating the charm of travertine marble. Shadow patterns created by the fissures cause its appearance to vary interestingly when viewed from different angles.

Two coats of tough finish give CELOTONE Fissured Mineral Tile a surface of high light reflection value, superior washability. Can be washed repeatedly with no impairment of sound-absorbing properties. Has the paintability inherent to products of this type.

TO SEE SAMPLES OF CELOTONE, contact your distributor of Acousti-Celotex Sound Conditioning Products. If you don't know where to reach him, write to The Celotex Corporation, Dept. AF-23, 120 S. LaSalle St., Chicago 3, Ill. In Canada, Dominion Sound Equipments, Ltd., Montreal, Quebec.

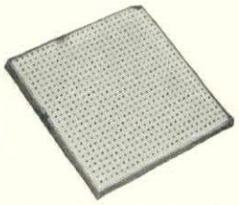


ACOUSTI-CELOTEX TRADE MARK REGISTERED U. S. PAT. OFF.

Sound Conditioning

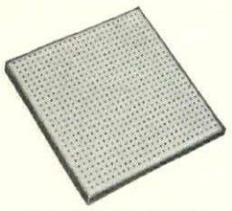
PRODUCTS FOR EVERY SOUND CONDITIONING PROBLEM

THE CELOTEX CORPORATION, 120 S. LaSalle Street, Chicago 3, Illinois



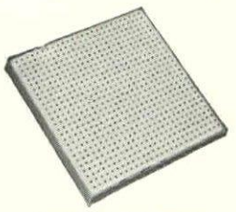
ACOUSTI-CELOTEX*
FLAME-RESISTANT SURFACED TILE

A cane fibre tile with a flame-resistant surface. This tile meets *Slow Burning* rating contained in Federal Specifications SS-A-118a. It may be washed with any commonly used solution, satisfactory for good quality oil-base paint finishes, without impairing its flame-resistant surface characteristics and without loss of sound-absorbing capacity. Repainting with Duo-Tex flame-retarding paint will maintain peak efficiency. Supplied in all sizes and thicknesses of regular cane tile.



ACOUSTI-CELOTEX*
CANE FIBRE TILE

A lightweight, rigid unit, combining acoustical efficiency with a durable, smooth surface. Perforations (to within ⅛" of the back) assure repeated paintability, easy maintenance. Available in a variety of sound-absorbent ratings. Dry rot proofed by exclusive Ferox* process.



ACOUSTI-CELOTEX*
MINERAL TILE

Made of mineral fibre, felted with a binder to form a rigid tile with a universal rating of incombustibility. Perforated with small holes extending almost to the back, this tile provides high acoustical absorption plus unrestricted paintability by either brush or spray method.



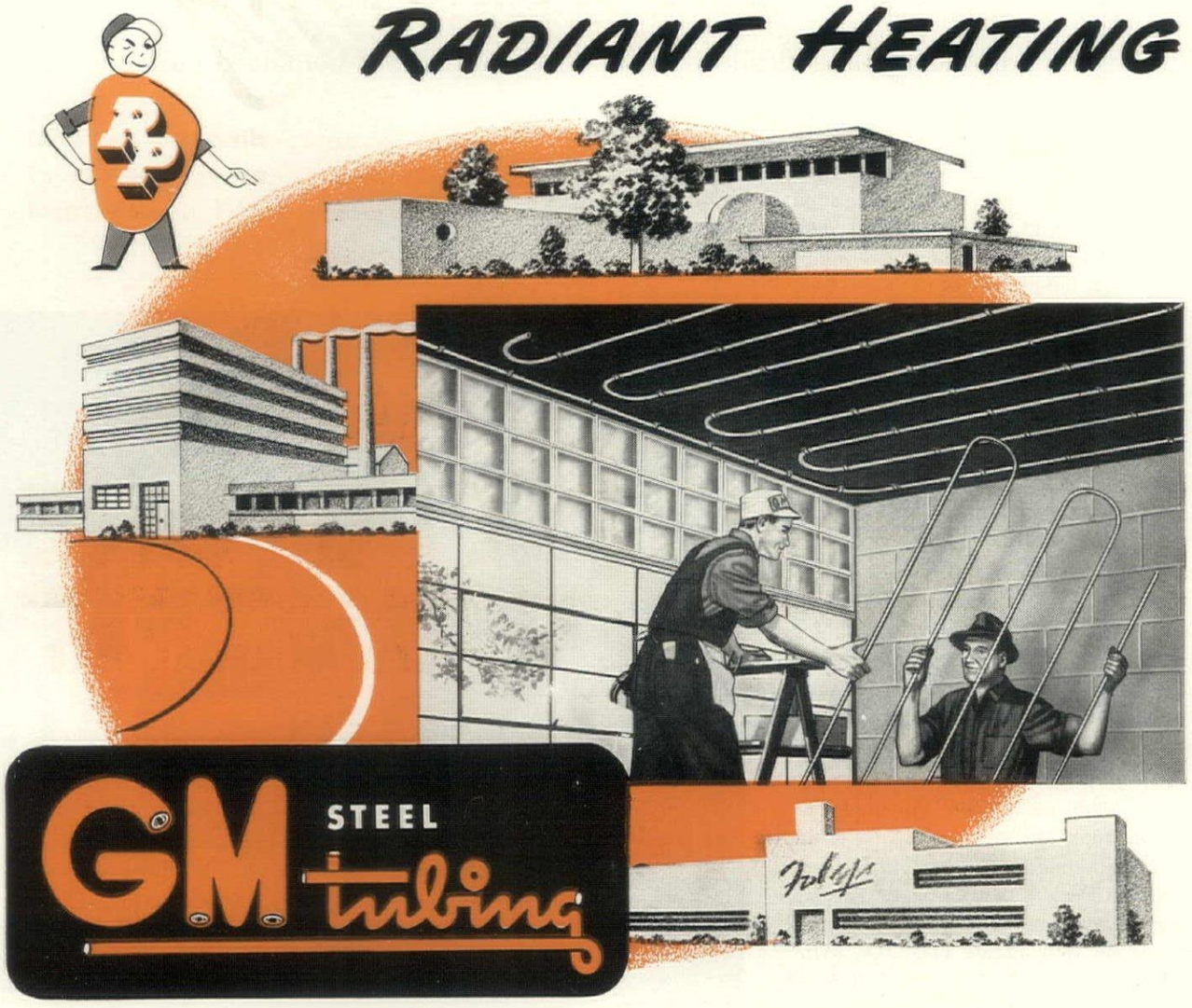
ACOUSTEEL*

Combines a face of perforated steel with a rigid pad of sound-absorbing Rock Wool to provide excellent sound-absorption, together with attractive appearance, durability and incombustibility. The exposed surface of perforated steel is finished in baked-on enamel. Acousteel is paintable, washable, cleanable.

**Trademarks Reg. U.S. Pat. Off.*

THE RIGHT ANSWER FOR

RADIANT HEATING



Just as more and more building plans call for radiant heating, so do their installation "specs" call for the use of *steel* tubing . . . and particularly GM Steel Tubing. That's because it combines lasting quality, adaptability and low cost. Check the features and you'll find that *only GM Radiant Heating Tubing* offers all these advantages:

LOW MATERIAL COST—yet meets the strict requirements for radiant heating. GM Steel Tubing is *all steel*—no secondary bonding alloys to encourage electrolytic corrosion.

LOW HANDLING COST. 120′ to 1000′ continuous coils *eliminate fittings and joints* in plaster and under grade—reduce labor costs and, at the same time, lessen chance of leakage.

HIGH QUALITY, STRENGTH and UNIFORMITY. Every foot of GM Steel Tubing is hydrostatically tested at 2000 pounds per square inch. In addition, sections are subjected to "destructive" tests such as flaring, twisting, flattening, etc. Such tests assure you of quality and uniformity.

SMALL, YET TOUGH. GM Steel Tubing is small enough for easy handling, yet tough enough to be walked on or roughly handled without damage. Complete serpentine coils can be readily formed in heating contractor's shop or at building site.

SEND FOR YOUR FREE BROCHURE



Entitled *"A New Approach to Radiant Heating,"* this profusely illustrated Rochester Products brochure tells why GM Steel Tubing is the choice of more and more progressive builders. Send today for your free copy.

GM STEEL TUBING

ROCHESTER PRODUCTS *DIVISION OF GENERAL MOTORS*
Rochester, N. Y., U. S. A.

MODERN OFFICE BUILDING achieves utmost in air conditioning flexibility with 20 Frigidaire Self-Contained units

Catering to the individual comfort requirements of such varied types of businesses as a dance studio, a large drug store, a restaurant, and a variety of business offices calls for the most flexible of air conditioning systems. So, when the owners of the attractive, new Barnett-Madden Building, in Jackson, Miss., decided to install air conditioning, they investigated various types of systems. General Refrigeration and Appliance Co., the local Frigidaire Dealer, solved the problem with 20 Frigidaire Self-Contained Air Conditioners, from 3 to 10-ton capacities. This arrangement permits an operating range of from 3 to 112 tons at any given time depending upon the requirements of the various parts of the building.

Aside from the flexibility factor, this system gives the building owners the benefit of economy—both in installation and operation. And the fact that, for servicing or maintenance, it is not necessary to shut down the entire system at one time, is an additional advantage to this method of air conditioning an entire building.

Frigidaire Self-Contained Air Conditioners offer unique advantages for installations of this kind. For expert help in planning similar installations or in solving any air conditioning or refrigeration problem —call the Frigidaire Dealer, Distributor or Factory Branch that serves your area. Look for the name in the Yellow Pages of your phone book. Or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Toronto 13, Ontario.

Barnett-Madden Building
Jackson, Miss.



The Barnett-Madden Building is one of the city of Jackson's finest examples of modern, functional architecture.



Frigidaire Self-Contained Air Conditioners require a minimum of space, are powered by Frigidaire's efficient, dependable XD Meter-Miser Compressor.

FRIGIDAIRE

Dependable Air Conditioning and Refrigeration Products

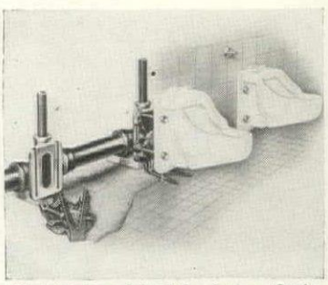
Built and backed by General Motors

Complete line of Air Conditioners • Reach-In Refrigerators
Water Coolers • Ice Cube Makers • Ice Cream Cabinets • Display Cases
Compressors • Beverage Coolers • Home Appliances

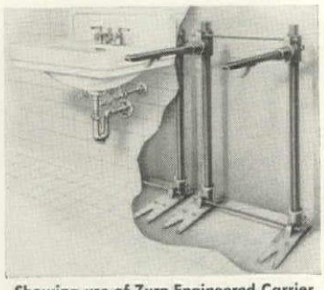
This combination GIVES GREATER FLEXIBILITY FOR PLANNING REST ROOMS . . . *insures against untimely obsolescence*



A battery of American-Standard Wall-Type Toilets installed with Zurn Engineered Carrier Systems which relieve the wall of all the load! There is a Zurn Adjustable Carrier System for every wall-type plumbing fixture — lavatory, toilet, urinal, sink and fountain.



Wall-type model of the famous Sanistand Urinal—a urinal especially designed for women by American-Standard. It is installed with a Zurn Engineered Carrier System especially designed for this fixture which lifts sanitation in public rest rooms to an all-time high and reduces maintenance cost.



Showing use of Zurn Engineered Carrier System No. 1231 for installing American-Standard Lucerne Wall-Type Lavatory Fixture. Zurn Engineered Carrier Systems for wall-type fixtures reduce wall thickness and are usable with all types of wall construction.

AMERICAN-Standard off-the-floor plumbing fixtures

installed with and supported by

ZURN

Engineered Carrier Systems

Greater flexibility in the choice of floor constructions and wall constructions and height of ceiling—flexibility that can result in a gain of more usable floor space. When you use American-Standard Off-The-Floor Plumbing Fixtures installed with Zurn Engineered Carrier Systems, virtually all elements of design and construction are unfettered, and you will find unrestricted opportunity to exercise your imagination, skill and ingenuity in planning modern rest rooms that will win both owner and user approval. This combination opens the way to major savings in the over-all cost of a building and usually reduces the day-to-day, dollar cost of rest room maintenance as much as 25 to 30%.

J. A. ZURN MFG. CO. • PLUMBING DIVISION, ERIE, PA.

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION, PITTSBURGH, PA.

WRITE FOR THESE FREE BOOKLETS

These booklets present up-to-date factual information for planning Modern Rest Rooms.



J. A. ZURN MFG. CO., PLUMBING DIVISION, ERIE, PA. U.S.A.

Please send me the two booklets on Modern Rest Rooms, "You Can Build It and Maintain It for Less A NEW WAY," and "The American-Standard Better Rest Room Guide."

Name and Title .....

Company .....

Street .....

City and State .....

Please attach coupon to your business letterhead.



New comfort and new beauty with the new TRANE

The Trane Company, LaCrosse, Wis. • East. Mfg. Div., Scranton, Penn.



New Baseboard Convector by TRANE brings you improved beauty of design plus . . .

Better solutions to 8 heating problems

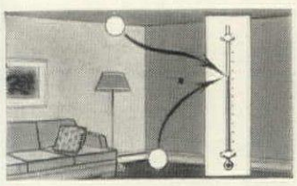
1 ***Hidden heat that's designed to match (never mar) the beauty of the modern home!***

You look at it . . . and it's beautiful. Your clients will agree. It truly is! But the real beauty of the new TRANE Baseboard Convector is that you *don't* look at it.

It's inconspicuous. Built-in. Part of the wall. Clean.

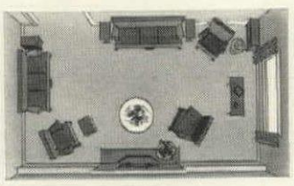
Your clients can paint it to match the walls. They can hang draperies and curtains freely. They can put furniture *anywhere!*

So to see the *true* beauty of the new TRANE Baseboard Convector . . . look at the new beauty it gives the *rest* of the room. Hidden heat. It's a revolution!



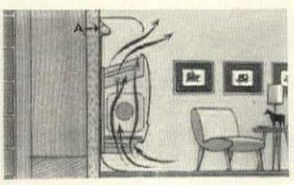
2 ***Even, all-over heat stops wall and window drafts!***

The TRANE Baseboard Convector "surrounds" the homeowner with a wall of slowly-moving warm air. Temperature from floor to ceiling is uniform within a few degrees. Blocks down-drafts from cold walls and windows.



3 ***Complete freedom for furniture arrangement!***

There's nothing in the way. Nothing protruding. No hot blasts of air or scorching-hot surfaces to force the dweller or his furniture out of place. The cabinet projects only 2¾". Recessed, only 1½".



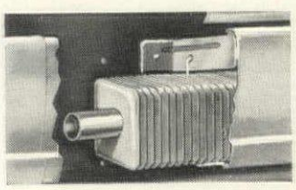
4 ***Features that help homes stay clean longer!***

Heat is directed out and away from wall through uninterrupted front opening. One piece bottom-back-top, full-length rubber strip seals unit to wall. Coved bottom, smooth easy-to-clean top, no unsightly grill work.



5 ***Hidden heat that neither burns nor blasts!***

You can touch it anytime. The TRANE Baseboard Convector cabinet is never more than warm to the touch. And the heat rises out of it gently, slowly, evenly . . . never with on-and-off, hot-and-cold blasts.



6 ***Free-hanging element for quiet operation!***

The famous TRANE fin-and-tube heating element hangs on swinging brackets within the cabinet. It's designed to hang freely . . . to prevent scraping against the cabinet. No moving parts, nor ducts to carry noise.



7 ***Fast response keeps heat uniform and costs low!***

Copper and aluminum surface of the TRANE heating element provides extra fast response. There's no fuel wasted on long warm-up and cool-off periods. The home dweller gets heat quickly, when he needs it.



8 ***Simple snap-on installation saves labor, money!***

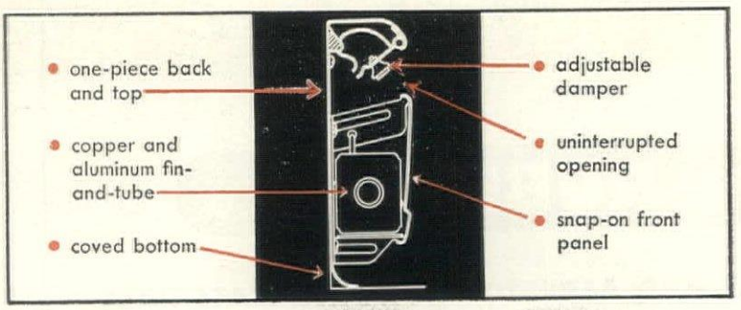
In new construction or remodeling jobs, the TRANE Baseboard Convector can be installed so fast, so easily that the initial cost is low . . . surprisingly low. Check your TRANE Sales Office for details.



Most complete baseboard data book available: FREE!

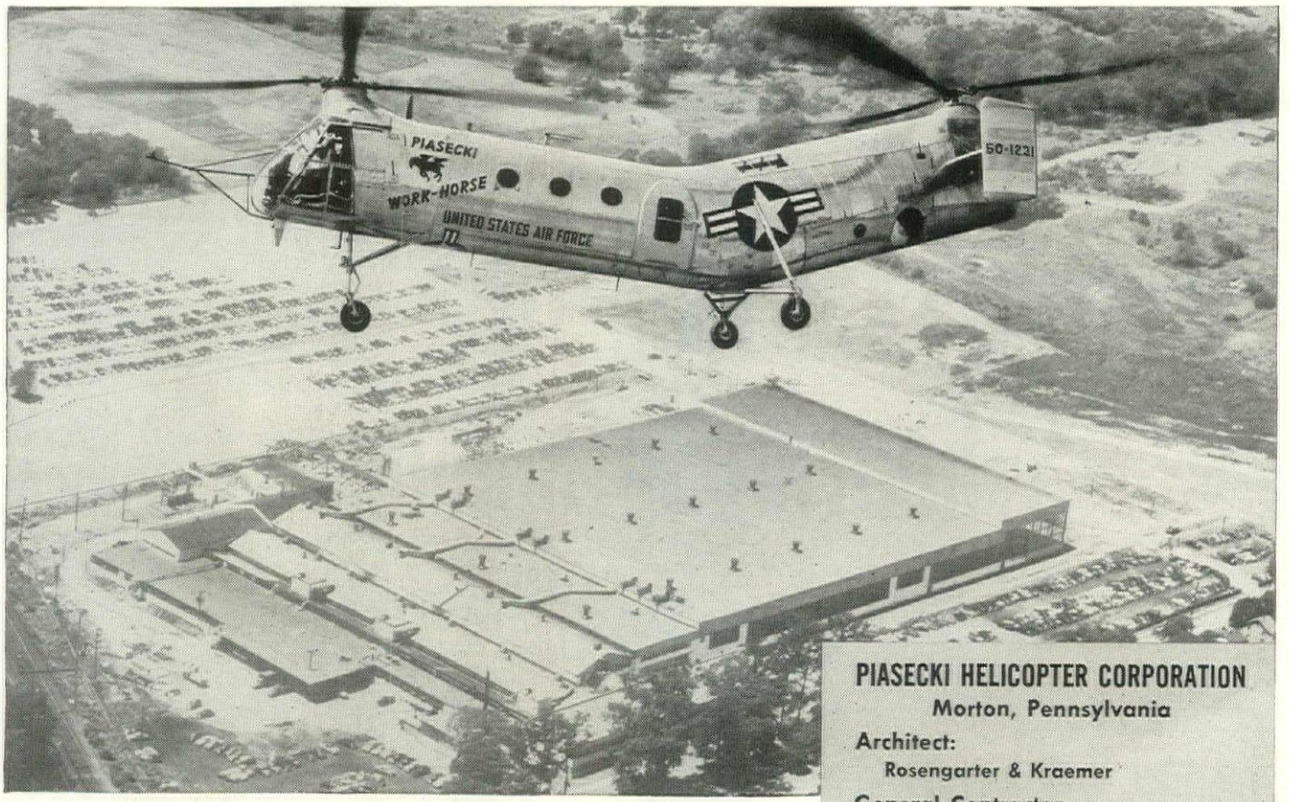
TRANE engineers have compiled complete information on capacities, installation, roughing-in dimensions, control diagrams. The most complete literature available. Write for free copy, plus 4-color catalog for your clients.

Performs better because it's designed better . . . 6 ways



Baseboard Convector

Trane Co. of Canada, Ltd., Toronto • 80 U. S. and 14 Canadian Offices



A Ruberoid WELCOME

Under its whirling rotor blades, 2500 squares of Ruberoid built-up roofing tell this Piasecki H-21 "Work Horse" helicopter that it's home again. From the air, this Ruberoid roof marks the spot where the Piasecki Helicopter Corporation has pioneered the development of tandem helicopters. Piasecki helicopters are proving their value daily with the Army and Navy. The Air Force soon will be using them.

What Piasecki is doing for aviation, Ruberoid did for roofing. More than 60 years ago, the same type of pioneering spirit inspired Ruberoid technicians to produce the first roll of asphalt roofing ever made. Today, Ruberoid provides a complete range of Built-Up Roofings to meet every condition and every need. Included in the Ruberoid Specification Book are roofs strong enough to land a Piasecki Helicopter, as well as garden roofs and water-cooled roofs. You're sure to find the perfect solution to all your roofing problems in this handy book. So write for your free copy today or consult Sweet's Architectural File, Section 8A/RU. The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.

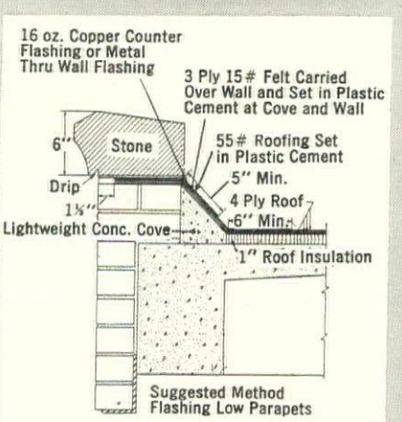
PIASECKI HELICOPTER CORPORATION
Morton, Pennsylvania

Architect:
Rosengarter & Kraemer

General Contractor:
Wark & Co., Philadelphia

Roofing Contractor:
Geo. H. Duross, Inc., Philadelphia

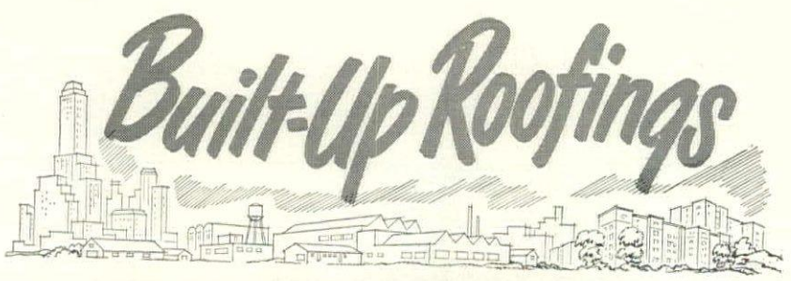
RUBEROID RECOMMENDATION
(A typical detail example from the Ruberoid Specification Book.)



THE RIGHT ROOF FOR ANY JOB — FROM ONE SOURCE

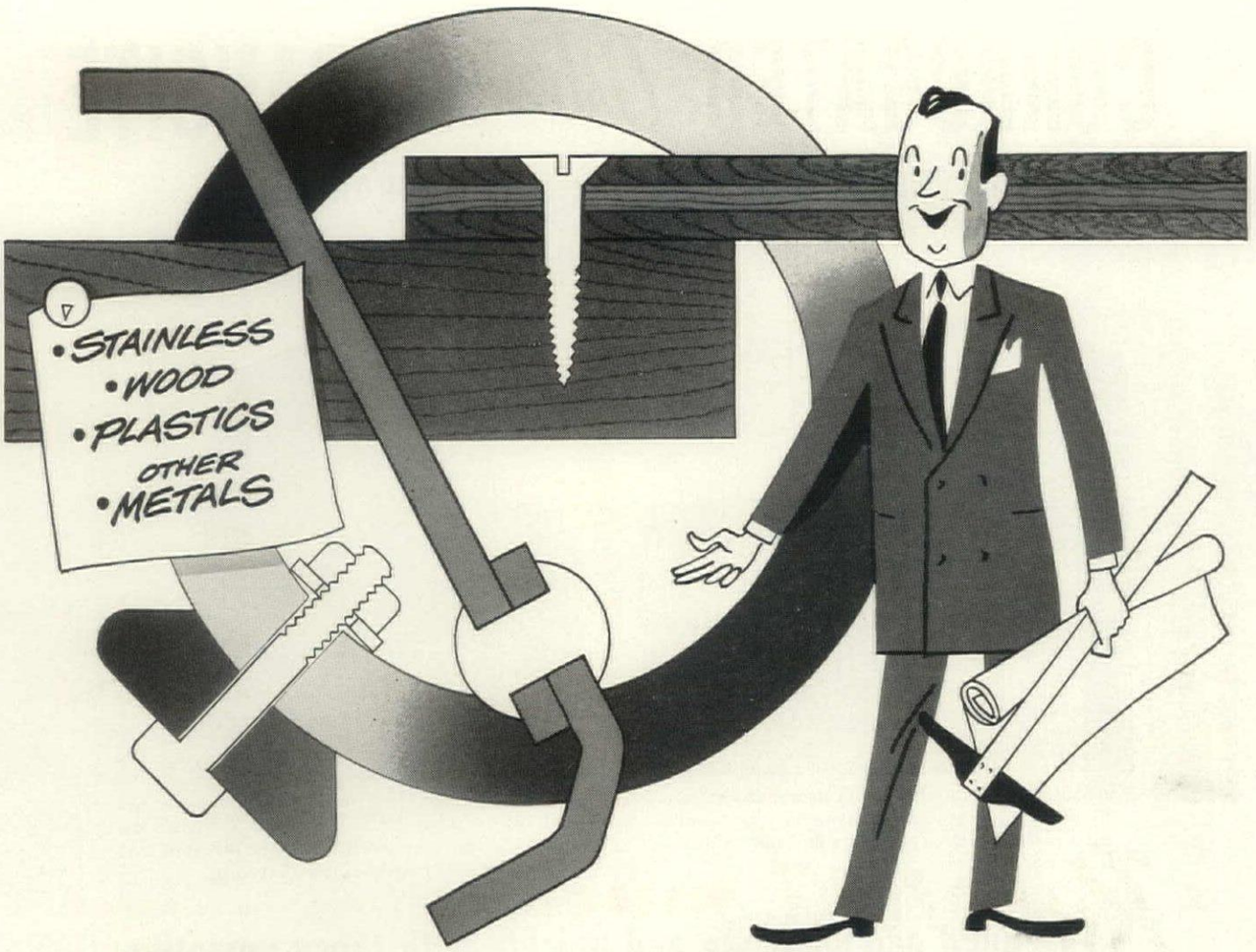


Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, smooth or gravel-and-slag surfaced Ruberoid Special Bitumen . . . You'll find specifications for every type of Built-Up Roofing in the Ruberoid book. Ruberoid Approved Roofers will help you select those that best meet the particular needs of every job.



The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS



Fasten it with STAINLESS STEEL

for Better Looks – Longer Life

LEADING PRODUCERS OF FASTENERS USE ALLEGHENY METAL

A complete line of stainless steel fasteners—all types and sizes of bolts and nuts, rivets, wood and machine screws, cotter pins, washers, etc.—are made of Allegheny Metal by the leading manufacturers in this field. Get in touch with them for catalogs and prices, or write us direct.

ADDRESS DEPT. B-38

Allegheny Metal fasteners are non-rusting, non-staining. They will last as long as, or longer than, the materials they join. You can count on them to stand up through the years—both in strength and in bright good looks.

Best of all, stainless steel fasteners can be used anywhere. It isn't necessary that the materials to be joined are stainless—these corrosion-proof fasteners are the perfect answer for joining other metals, woods, or plastics.

Fasteners made of Allegheny Metal are produced in complete variety—every type and size that your job requires.

For improving quality and reliability wherever they're used—and for the economy of lifetime service—specify fasteners made of the time-tested stainless steel, *Allegheny Metal.* ● For any technical data or engineering help in the use of stainless steel, address *Allegheny Ludlum Steel Corporation, Henry W. Oliver Bldg., Pittsburgh 22, Pa.*

You can make it **BETTER** with

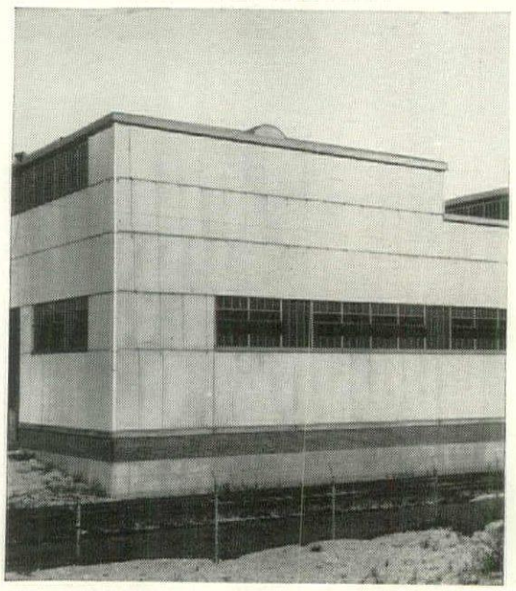
Allegheny Metal

W&D 3590

AL
TIME-TESTED STAINLESS STEEL

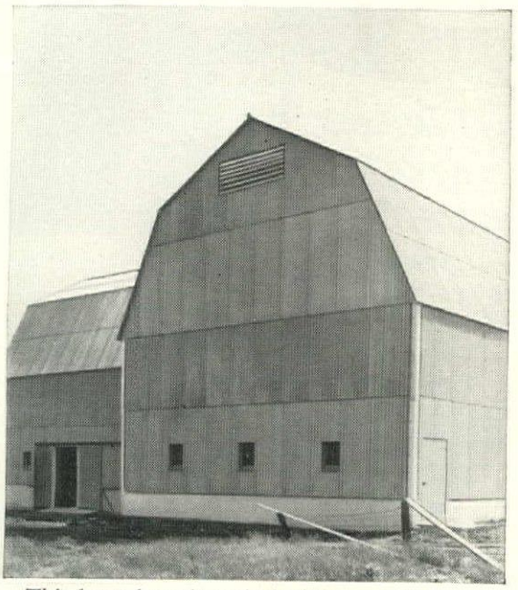
CORRUGATED *Asbestos* TRANSITE*

FOR THE FACTORY



Because it is practically indestructible, Johns-Manville Corrugated Transite is extensively used in this plant to provide a durable, trouble-free exterior.

FOR THE FARM



This large barn is typical of the excellent use of Johns-Manville Corrugated Transite on farms where it helps eliminate the threat of loss from fire, destructive rot, and vermin.

You build economically and quickly with these versatile fireproof and weatherproof asbestos building sheets

In the past quarter century, Johns-Manville Corrugated Transite has proven an ideal material for roofs and for sidewalls of industrial, commercial, institutional and agricultural buildings. Made of asbestos and cement, the large sheets are easy to handle, go up quickly with a minimum of framing. Practically indestructible, Corrugated Transite is fireproof, rotproof, weatherproof; needs no paint or special treatment to preserve it; and can be salvaged and re-used if necessary.

The streamlined corrugations and attractive shadow lines of J-M Corrugated Transite have great architectural appeal . . . creating a contemporary effect in keeping with today's growing requirements for functional beauty inside as well as out.

Investigate J-M Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, long-lasting, trouble-free structure regardless of size or purpose. For complete details write Johns-Manville, Box 158, Dept. AF, New York 16, N.Y. In Canada write 199 Bay Street, Toronto, Ontario.

*Reg. U.S. Pat. Off.



EASY TO FASTEN TO STEEL



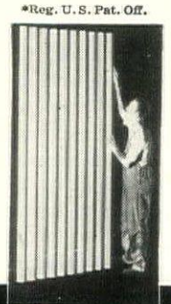
EASY TO SAW



EASY TO DRILL



EASY TO NAIL TO WOOD



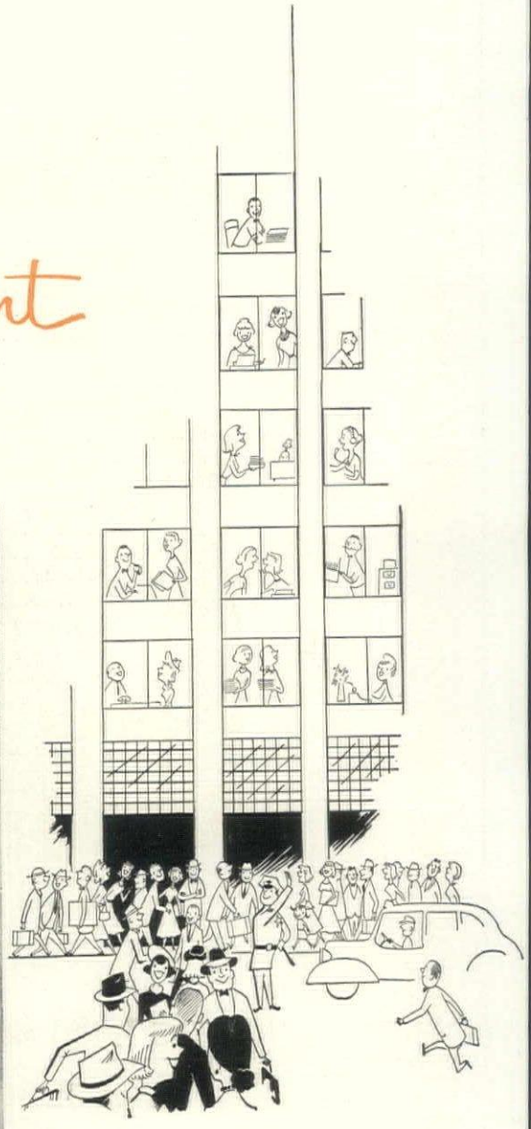
Johns-Manville *Asbestos* **CORRUGATED TRANSITE**

Otis

AUTOTRONIC®

Without Attendant

ELEVATORING





Passengers simply press buttons for the floors they want

SAVES UP TO $7,000 A CAR



HANDLES HEAVY BUILDING TRAFFIC

Autotronic—WITHOUT ATTENDANT—Elevatoring operates the cars as a coordinated group. Its electronic equipment makes car operation completely automatic. It offers the only substantial saving in building operation that is available today. It saves up to $7,000 a car, each year.

Autotronic—WITHOUT ATTENDANT—Elevatoring has been in successful operation for more than two years. It has proven itself in single-purpose buildings. It has handled diversified traffic to everyone's satisfaction. It has the speed and the automatic group supervisory control needed in many large buildings, yet is adaptable to small buildings. It can be used in hospitals. Its specific application is a matter of individual study.

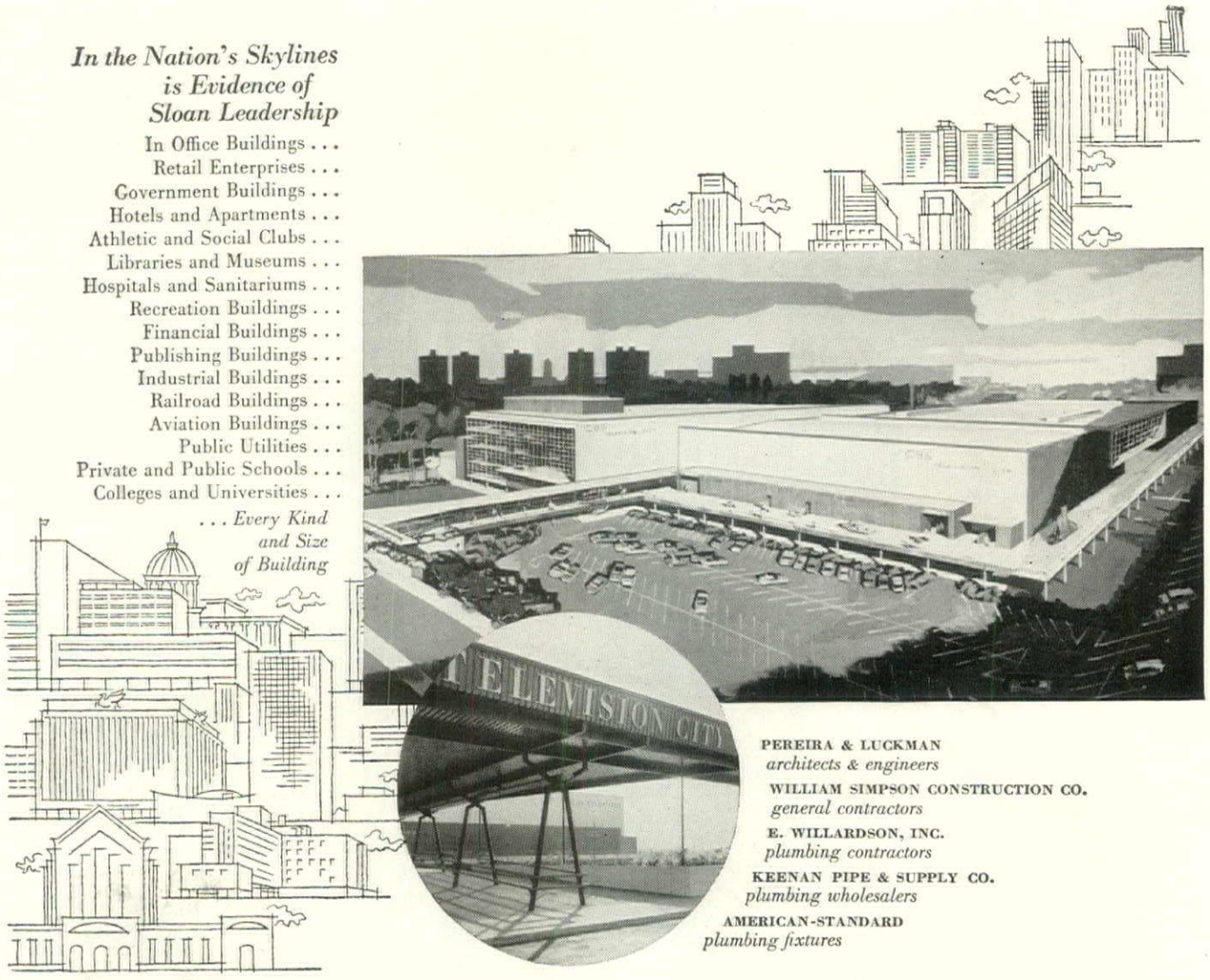
Why not visit an actual Autotronic—WITHOUT ATTENDANT—Elevatoring installation in a new or modernized building? Talk with the tenants and management. Ask any of our 266 offices for details.

Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

BETTER ELEVATORING IS THE BUSINESS OF OTIS

In the Nation's Skylines is Evidence of Sloan Leadership

In Office Buildings . . .
Retail Enterprises . . .
Government Buildings . . .
Hotels and Apartments . . .
Athletic and Social Clubs . . .
Libraries and Museums . . .
Hospitals and Sanitariums . . .
Recreation Buildings . . .
Financial Buildings . . .
Publishing Buildings . . .
Industrial Buildings . . .
Railroad Buildings . . .
Aviation Buildings . . .
Public Utilities . . .
Private and Public Schools . . .
Colleges and Universities . . .
. . . Every Kind and Size of Building



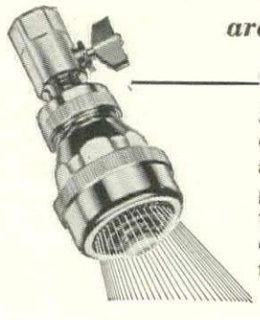
PEREIRA & LUCKMAN
architects & engineers
WILLIAM SIMPSON CONSTRUCTION CO.
general contractors
E. WILLARDSON, INC.
plumbing contractors
KEENAN PIPE & SUPPLY CO.
plumbing wholesalers
AMERICAN-STANDARD
plumbing fixtures

SOLUTION TO UNPREDICTABLE GROWTH

• Eventually CBS TELEVISION CITY, HOLLYWOOD, will be a multimillion dollar solution to the problem of housing a business of highly complicated character and unparalleled growth. The solution is *flexibility*. The entire project has been designed to be uniquely expandable both horizontally and vertically and to cover approximately 25 acres. For televising, a studio will be provided for each half hour of a 12-hour schedule, with unhampered movement of personnel, properties and scenery. The project will include a large office building, operations building, stores and restaurants. The first section, pictured above, is now in use. This, *the first building of its kind ever designed*, is fully equipped with SLOAN *Flush* VALVES, famous for efficiency, endurance and economy—more proof of preference that explains why . . .

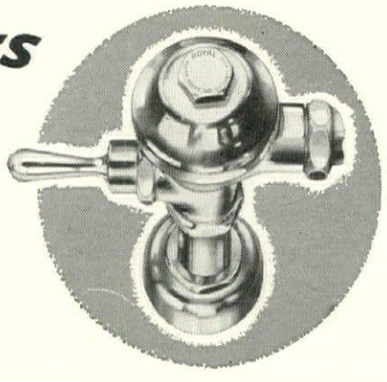
more **SLOAN** *Flush* **VALVES**
are sold than all other makes combined

SLOAN VALVE COMPANY • CHICAGO • ILLINOIS



Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. When turned on it delivers cone-within-cone spray of maximum efficiency. When turned off it drains instantly. It gives greatest bathing satisfaction, and saves water, fuel and maintenance service costs.

Write for completely descriptive folder



mill-mixed STRUCTO-LITE*

PERLITED GYPSUM BASECOAT PLASTER

50% less weight on framing members
Gives increased fire protection
Builds interiors of uniformly high strength
Moderate in cost
Adaptable—as only plaster can be

now available coast to coas

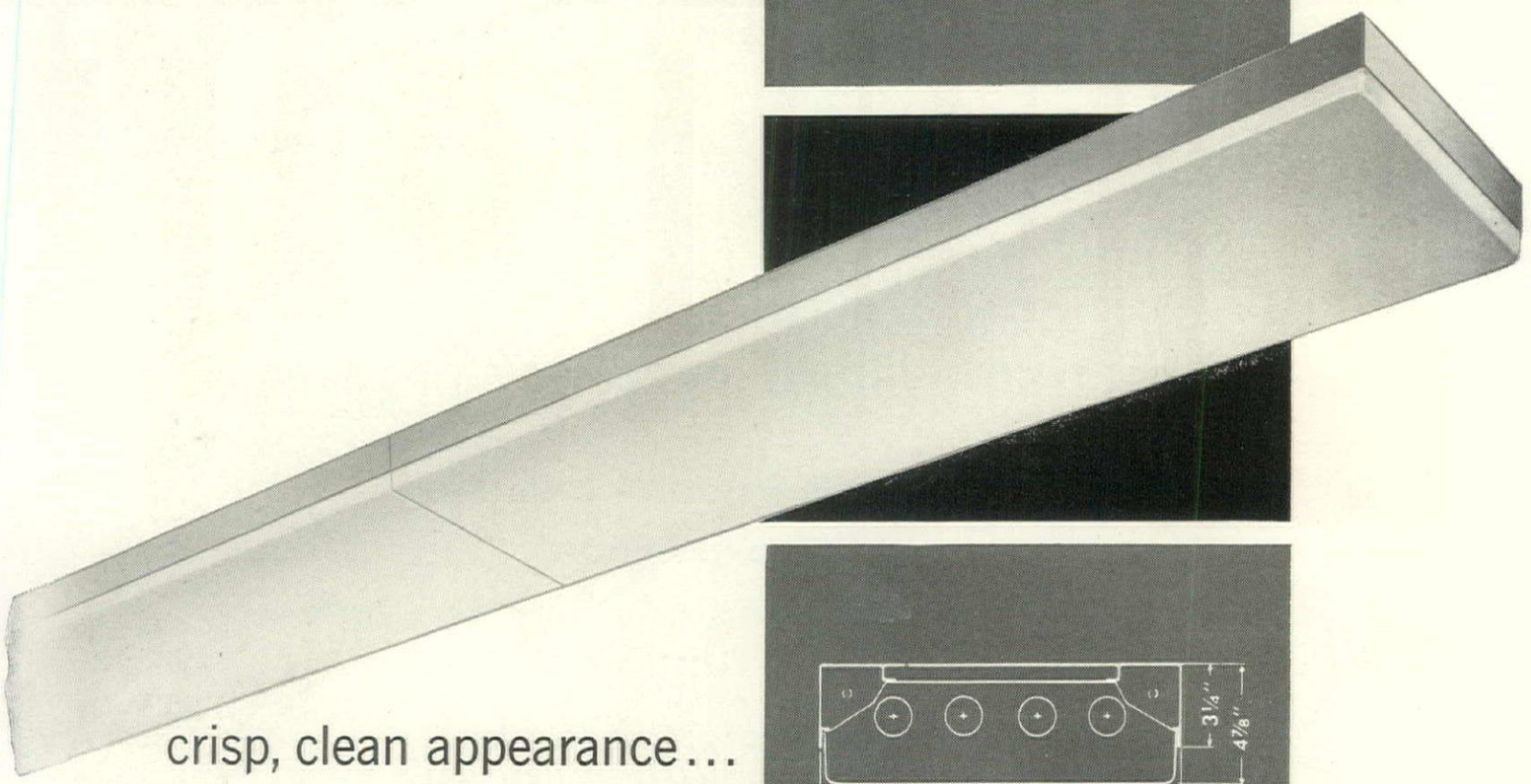
STRUCTO-LITE is pre-mixed at the mill, eliminating variable sets caused by variations of aggregates mixed on the job. Besides, it's light weight; less than half the weight of sanded plaster proportioned 1:3 . . . less than half the weight on the wall and framing! Even though mortar weight is 50% less, STRUCTO-LITE develops 20% more compressive strength. And it's extra safe; in many constructions it holds back flames up to twice as long as sanded plaster. Finished cost compares favorably with plaster sanded on the job.

So for performance that's top-flight, specify RED TOP* STRUCTO-LITE. Ask your U.S.G. Architect's Service representative for complete details.

*T. M. Reg. U. S. Pat. Off.

the greatest name in building

optiplex



crisp, clean appearance... evenly diffused lighting

MOLDED PLEXIGLAS DIFFUSERS spread soft, even illumination throughout the area and onto ceiling, relieving unwelcome brightness contrasts.

SMOOTH WHITE SURFACES of fixtures and diffusers provide unobtrusive appearance that blends into ceiling design.

RAPID START TRANSFORMERS light fixtures instantly without flicker. No starters required.

TWIN WIRING CHANNELS and full aluminum reflectors assure full transformer life and maximum lamp output. Diffusers snap in and out with fingertip pressure for easy servicing.



Installation at Sinclair Oil Co. by Kenneth H. Ripnen Co., Inc. 600 5th Ave. Bldg., N. Y. C. • Architect: Carson & Lundin

Lightolier Optiplex is available in recessed, surface or stem mounting, single or continuous runs. For complete catalog and data, write LIGHTOLIER, INC., Jersey City 5, N. J.

LIGHTING *by* LIGHTOLIER



Perkins & Will, Architects • J. E. Lovejoy & Co., Contractors

How to borrow a sunbeam ...to better daylight schools

Borrowing a sunbeam to daylight a school is a very neat trick if you can do it.

And that's just what Perkins & Will, architects did in designing the Keokuk, Iowa High School. Ceco steel windows played a big part in this unique method of daylighting for better vision.

Functional use of daylight was achieved through window arrangement and purposeful positioning of the building Built side by side, corridors and classrooms all have outside exposures. Classrooms face north utilizing diffused indirect north light. Corridors take the shape of window walls from floor to ceiling with a southern view and on one side open strips at the top of the inner walls of classrooms admit "borrowed light" from the corridor areas. Corridors become pleasing sun-lit passageways strikingly different from the dark tunnels so prevalent in central corridored schools.

Ceco Architectural Projected Windows were selected because their slender muntins mean more light gets in, more view, too. They won't rot, warp, stick or swell . . . provide controlled ventilation. Cost? Lowest of all installed with generous savings in maintenance.

Ceco's network of multiple offices offered a plus value. Liaison contact with the contractor J. E. Lovejoy & Co. came from Des Moines. In St. Louis windows were adapted to architectural design . . . Chicago adds erection work and drawing of window detail.

Today more and more architects, contractors and engineers depend more and more on Ceco in solving their building problems.

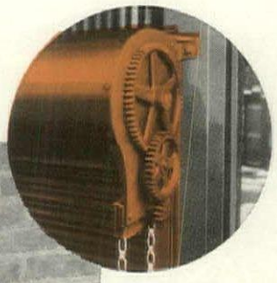
CECO STEEL

CECO STEEL PRODUCTS CORPORATION

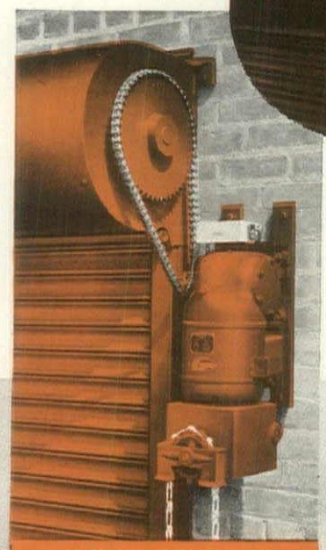
General Offices: 5601 W. 26th St., Chicago 50, Illinois
Offices, warehouses and fabricating plants in principal cities

In construction products* CECO ENGINEERING *makes the big difference

Rolling Steel DOORS



MAHON CHAIN-GEAR OPERATOR



MAHON STANDARD POWER OPERATOR 920-P

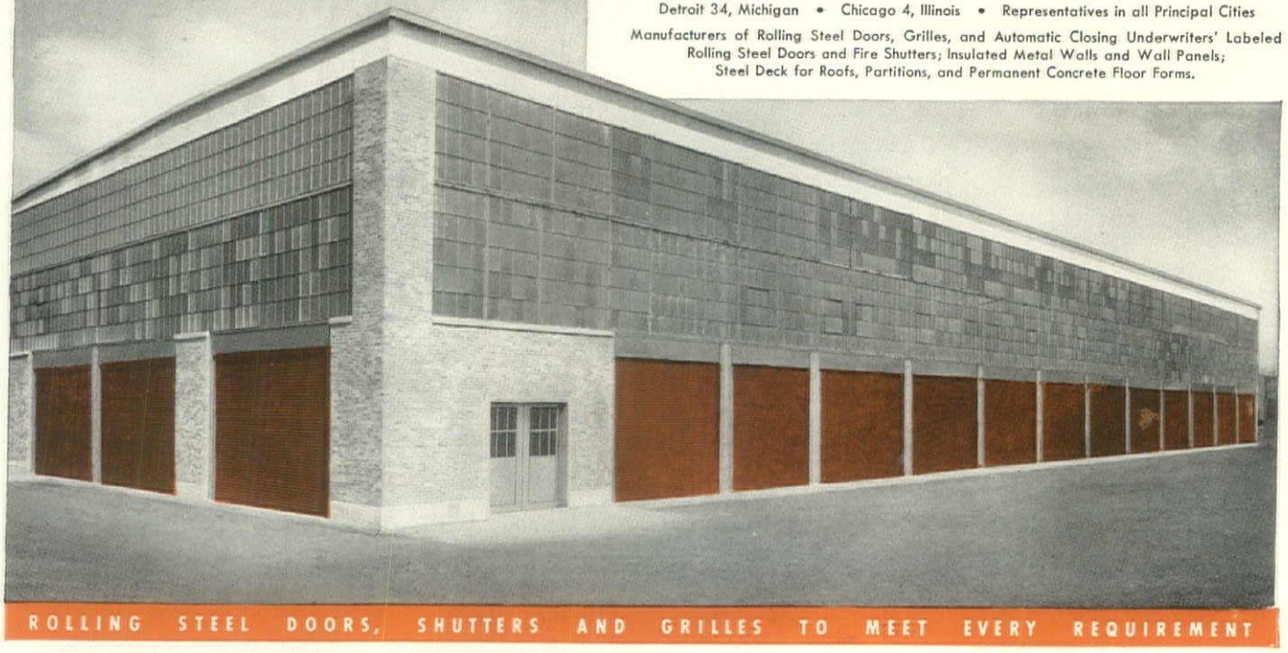
Manually, Mechanically, or Power Operated

Illustrated below is another excellent example of Rolling Steel Doors installed in a special purpose building where no other type of door would meet the requirements. Because this is a foundry building with high truss clearance, vertical acting doors with no overhead obstructions above the floor adjacent to the door opening were demanded by the owners . . . other requirements were: that the doors shut off no light above the lintel when open, and, that the opening and closing action of the doors occupy no usable space either inside or outside of the door opening. The vertical roll-up action of rolling steel doors met these demands perfectly . . . and, in addition, their all-metal construction provided permanence, better protection against intrusion and fire, and assured the owners a lifetime of continuous trouble-free service. Rolling Steel Doors will meet your requirements better too. But, when you select a rolling steel door, know the facts—check and compare the specifications carefully . . . you will find that Mahon Rolling Steel Doors have built-in extra value features which you will want in the doors you buy. See Sweet's Files for complete information including specifications, or write for Catalog G-53.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Fifteen Mahon Rolling Steel Doors installed in a new special purpose building recently constructed as an addition to a large midwest foundry.

MAHON

NOW! YOUNG OFFERS YOU Gas-Fired Unit Heaters

Featuring Aluminized Steel Construction



Built-in DRAFT DIVERTER assures efficient operation

Aluminum FAN delivers maximum volume of air, quietly

One-piece, welded, aluminized steel HEAT EXCHANGER

Adjustable LOUVERS control distribution of warm air

Welded, leakproof aluminized steel COMBUSTION CHAMBER

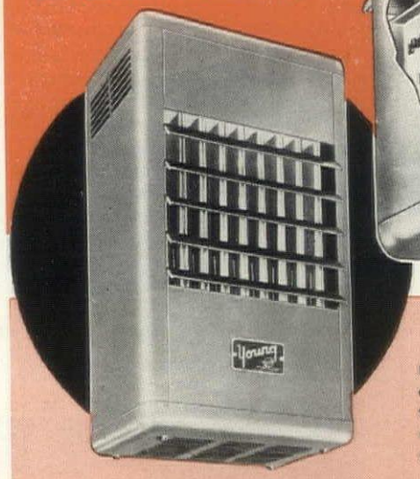
Grey enameled, bonderized heavy gauge steel CASING

Quiet, standard, single phase, 60-cycle, 115-volt MOTOR

Interchangeable, cast iron BURNERS for various gases

Automatic PILOT safety switch . . . temperature LIMIT control

Shut-off VALVE in pipe connection ahead of controls



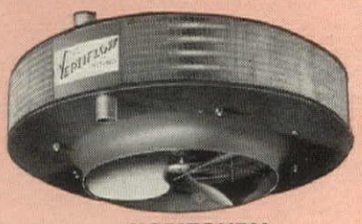
GAS-FIRED

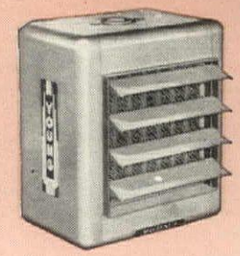
Unit Heaters are available in 7 sizes; 70,000 to 230,000 Btu's; AGA-approved for all kinds of gases.

Other Young Unit Heaters for Steam or Hot Water Systems

"VERTIFLOW"

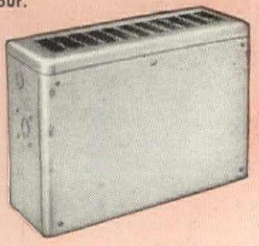
Unit Heaters for vertical air discharge are available in 7 sizes—in capacities from 52,600 to 552,000 Btu's per hour.





HORIZONTAL

Horizontal type Unit Heaters are available in 14 sizes . . . in capacities from 19,000 to 325,000 Btu's per hour.



CABINET

Cabinet Unit Heaters, available in three basic styles with capacities from 32,000 to 115,000 Btu's per hour, are used in auditoriums, lobbies, recreation halls, etc.

Pioneers in the Heat Transfer industry for more than 25 years, Young Radiator Company now offers you an efficient, dependable and economical Gas-Fired Unit Heater in seven sizes, ranging in capacities from 70,000 to 230,000 Btu/hr. input.

Attractive and modern in appearance, the units feature all welded, aluminized steel combustion chambers and heat exchangers which withstand the corrosive effects of gases and high temperatures, causing discoloration or destructive scaling. This feature alone adds many years to the service life of the Young Gas-Fired Unit Heater. For extra protection against corrosion, the heavy-gauge steel casing is bonderized before enamel is baked on.

Other Young Unit Heaters, available for steam or hot water systems, include the "Vertiflow," Horizontal and Cabinet models. For further details or catalog, see your Young Representative or write direct.

YOUNG

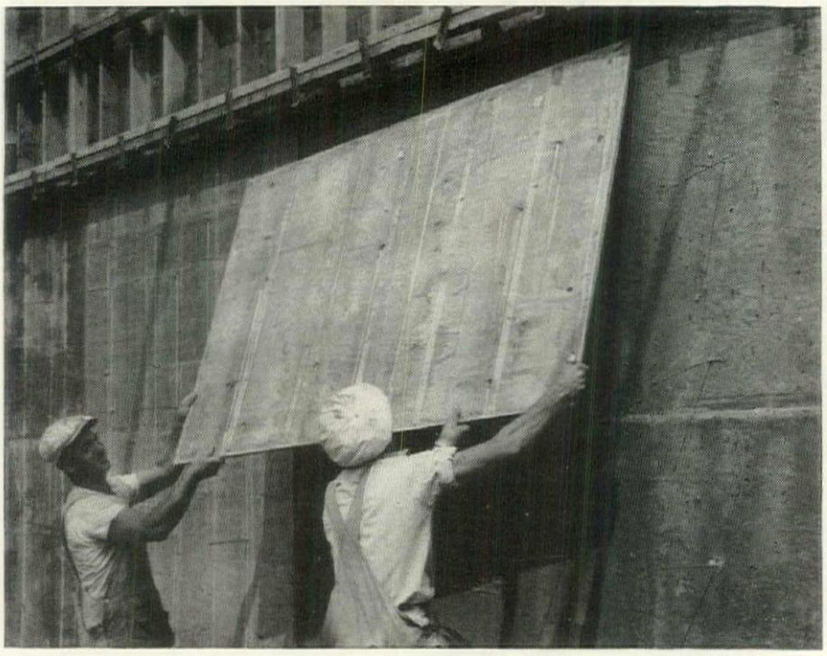
Heat Transfer Products for Automotive and Industrial Applications.

Young Quality
T. M. Reg. U.S. Pat. Off.

Heating, Cooling, Air Conditioning Products for Home and Industry.

YOUNG RADIATOR COMPANY

Dept. 603-B • RACINE, WISCONSIN
Factories at Racine, Wisconsin and Mattoon, Illinois
Sales and Engineering Offices in All Principal Cities



Re-usable Plywood Forms Cut Costs Up to 25%

FIGURE cost-per-use—and you'll find Douglas fir plywood your most economical form material.

Users report savings of 20% to 25% because plywood speeds form construction, cuts stripping time, and eliminates the expense of re-building forms once a job is under way.

Plywood is the modern form material—more economical than lumber in over-all cost. Far more versatile, too. Curved surfaces, rustication lines, fluting and other special effects are easy to achieve with plywood.

When re-use, speed and cost count—specify fir plywood forms.

Only Plywood Offers All These Advantages

- Plywood forms create smooth, fin-free surfaces
- Economical! Plywood forms can be used over and over
- Plywood forms speed work—save time and labor
- Plywood is strong, rigid—yet light, easy to handle
- Plywood forms are puncture-proof, water and mortar tight
- Plywood has superior nail and tie holding properties
- Plywood is easy to work with hand or power tools
- Plywood provides sheathing and lining in one material

EXTERIOR PLYFORM CONCRETE FORM Grade B-B EXT-DFPA

GENUINE DOUGLAS FIR PLYWOOD PLYFORM CONCRETE FORM PANEL INTERIOR-TYPE GRADE B-B D.F.P.A. INSPECTED

D.F.P.A. INSPECTED A Product of the Plywood Industry

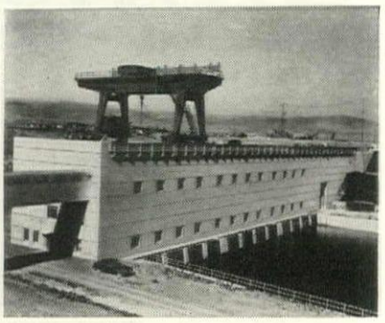
PLYFORM

GRADE FIR PLYWOOD

These registered trademarks identify concrete form fir plywood. INTERIOR PLYFORM (highly moisture-resistant glue) gives multiple re-use. For maximum re-use, specify EXTERIOR PLYFORM (100% waterproof glue). Other panels, for maximum re-use plus smoothest possible surfaces, include new plastic-surfaced and hardboard-faced fir plywood. Identified by the star-and-link industry hallmark of quality.

PANEL DISCUSSION

Plywood Concrete Forms Speed Work On Rush Job

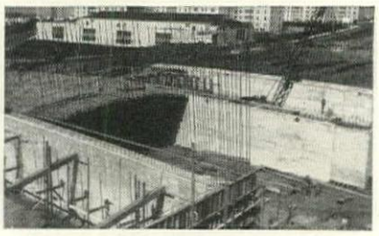


Plywood concrete form panels were credited with helping speed formwork time by up to 20 per cent in building the new Tracy Pumping Plant which furnishes the heartbeat of the giant California Central Valley irrigation project.

According to Fred L. Weiss, construction engineer on the job for Stolte Co., contractor responsible for all concrete work, speed was particularly important on the job because of a penalty clause in the contract. He credits plywood with speeding form construction and application time and costs by 15 to 20 per cent.

Interior PlyForm was specified by Bureau of Reclamation engineers for form work on the plant. Built-up plywood form sections, 20 to 40 feet long, were re-used an average of five times on the walls. Interior PlyForm was also used to form floor slabs as well as water inlet channels beneath the plant.

Plywood Ideal Form Material Reports Highway Builder



A typical use of plywood forms in highway projects is the six-lane Stanley Drive highway underpass in Northern California—built jointly by M and K Corporation and Eaton and Smith. The builders used ⅝" Interior PlyForm for all exposed surfaces for this half million dollar project.

"We wouldn't use anything but plywood for a job like that", says M and K Corporation President B. F. Modglin. "As far as we are concerned it is the ideal form material. It forms clean, smooth concrete, saves time and labor, and re-use cuts costs considerably."

Forms 16-feet high, 2½-feet wide at the bottom and 4-feet, 7 inches wide at the top were used for the ends of the bridge piers. Plywood was nailed across 2x4 and 4x4 studs, 12" o.c., backed by double 2x4 and 4x4 walers. Panel's for road slab were placed across 2x12 joists.

Standard Tie-Hole Spacing Gives Extra Re-Uses

Careful planning of tie-hole spacing and use of varying-size plywood form sections is paying off in extra re-uses on the Clover Park School job in Tacoma, Wash. On the job, 8′-long Exterior plywood form sections were pre-built in 3′, 4′ and 5′-heights to form concrete walls of the school which range in height from 2′ to over 16′. Necessity of drilling new tie-holes for each pour was eliminated by pre-drilling holes so that placement of tie-rods is standardized. Holes were made by stacking plywood and drilling with a template positioning guide.

The idea was developed by Roy Hartman, partner, Standard Construction Company, Tacoma. He reports that by eliminating drilling and form re-construction as the job progressed they were able to get better than 25 re-uses—and the plywood will give additional uses on subsequent jobs.

Plywood Girder Built For Half The Cost Of Steel Truss

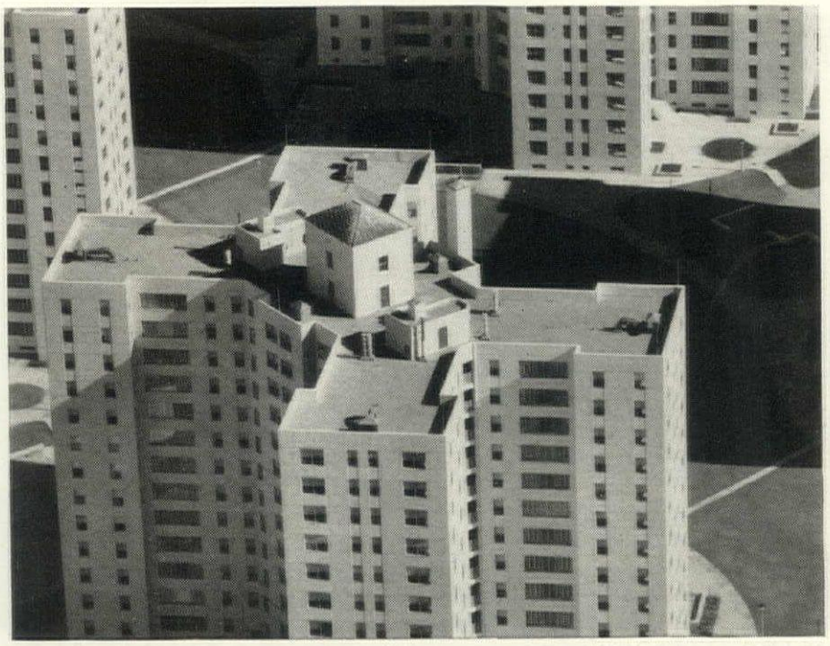
Once believed suitable for spans up to only about 60 feet, plywood girders considerably longer are now being used successfully. One of the longest plywood girders currently in use is at the Chief Joseph dam powerhouse in Western Washington. The plywood girder on this job is used to support conveyor belts which carry aggregate to blending bins. It is 120 feet long, with a 90-foot center span and cantilevered ends.

According to Murray Johnson, plant design engineer for Columbia River Constructors, an affiliate of Morrison-Knudson Co., Inc., plywood girders not only cost less than steel trusses, but are far easier to handle and hoist into position.



Johnson estimates that including material and labor, the plywood girder cost only about half as much as a steel truss for the same job. They can be easily salvaged for re-use simply by cutting them in half for hauling and splicing as needed.

The girder on the Chief Joseph job is on the upper run of an incline going up to the hopper. It consists of two I-beams spaced 3′ 3″ apart. It carries a 30″ wide rubber belt on the top flange, together with steel rollers shaped to form a trough to hold the gravel. Exterior plywood, 1″ thick, forms the 4′ web of the girder, with 2x6s bolted and glued on either side of the plywood to form the flanges. Plywood splice plates on both sides do double duty as web stiffeners.



Cast Smoother Concrete With Plywood Forms

PLYWOOD'S large panel size reduces joints and fins to the absolute minimum. That's one reason why concrete surfaces formed against plywood are smooth, uniformly attractive.

With plywood, you get no unsightly board marks. Concrete is free of fins. Finishing is simple—often unnecessary—when you use plywood forms. That means savings *plus* smoothness!

And remember: new overlay panels of Douglas fir plywood now mean even smoother concrete surfaces—plus maximum re-use. See grade data below. For further information, write Douglas Fir Plywood Association, Tacoma 2, Washington.

Only Plywood Offers All These Advantages

- Plywood forms create smooth, fin-free surfaces
- Economical! Plywood forms can be used over and over
- Plywood forms speed work—save time and labor
- Plywood is strong, rigid—yet light, easy to handle
- Plywood forms are puncture-proof, water and mortar tight
- Plywood has superior nail and tie holding properties
- Plywood is easy to work with hand or power tools
- Plywood provides sheathing and lining in one material

PLYFORM
GRADE FIR PLYWOOD

These registered trademarks identify concrete form fir plywood. INTERIOR PLYFORM (highly moisture-resistant glue) gives multiple re-use. For maximum re-use, specify EXTERIOR PLYFORM (100% waterproof glue). Other panels, for maximum re-use plus smoothest possible surfaces, include new plastic-surfaced and hardboard-faced fir plywood. Identified by the star-and-link industry hallmark of quality.

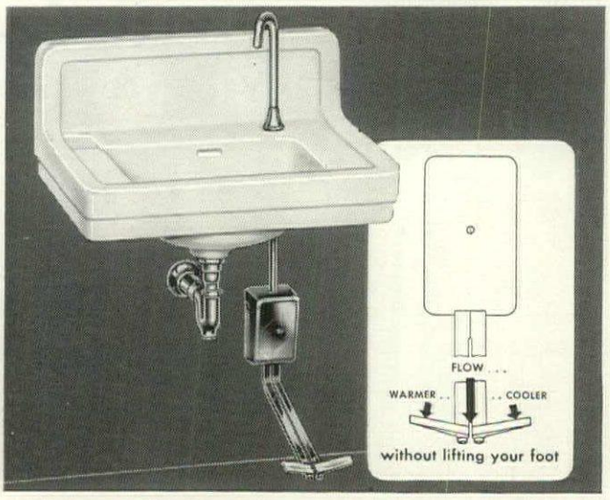
EXTERIOR PLYFORM CONCRETE FORM Grade B-B EXT-DFPA

GENUINE DOUGLAS FIR PLYWOOD PLYFORM CONCRETE FORM PANEL INTERIOR-TYPE GRADE B-B D.F.P.A. INSPECTED

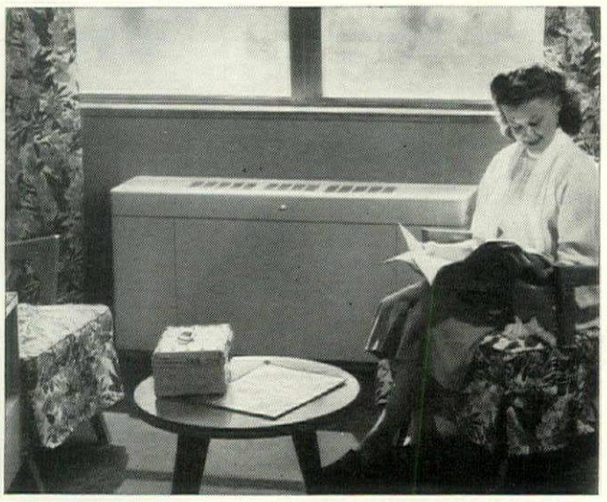
D.F.P.A. INSPECTED A Product of the Plywood Industry

PRODUCT NEWS from AMERICAN-Standard

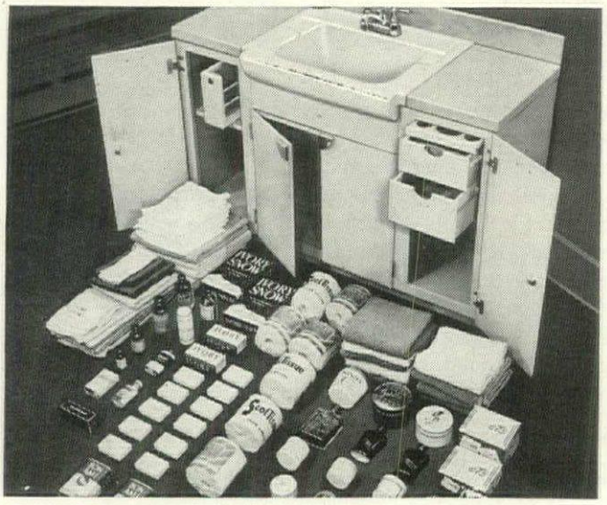
A review of products in the news and important features worth remembering



DOUBLE-PEDAL MIXING VALVE. This wall-mounted, self-closing valve brings added convenience to many hospital fixtures. With the heel acting as a pivot, one foot controls both water flow and water temperature, leaving hands completely free. You get maximum water flow with only 1½″ pedal travel. For easy floor cleaning, pedals can be suspended at 45° angle.



REMOTAIRE ROOM CONDITIONER. This remote type unit for multi-room installations heats in winter, cools in summer, filters and circulates the air all year 'round! Individually controlled units use chilled or heated water supplied through a simple piping system from a central water chiller and heating plant . . . no unwieldy ductwork needed.



NEW DRESSLYN LAVATORY-DRESSING TABLE. This handsome unit is compact, yet spacious. The cabinet is made of moisture-resistant wood finished with enamel; the lavatory is genuine vitreous china . . . both are available in white and 20 harmonizing color combinations. Counter top and splash back are enameled steel.



DUWELL SINK. This apartment-size, single-well sink has a built-in covered waste receptor with lift-out basket. The perforated basket drains into the waste receptor . . . garbage can be emptied simply by removing the basket. The 25″ x 21″ sink is made of rigid cast iron coated with acid-resisting enamel.

AMERICAN-Standard

American-Standard
Dept. AF-23, Pittsburgh 30, Pa.

Without obligation on my part, please send me your free literature on:

☐ Double-Pedal Valve ☐ Remotaire Room Conditioner
☐ New Dresslyn unit ☐ Duwell Sink

Name .....

Address .....

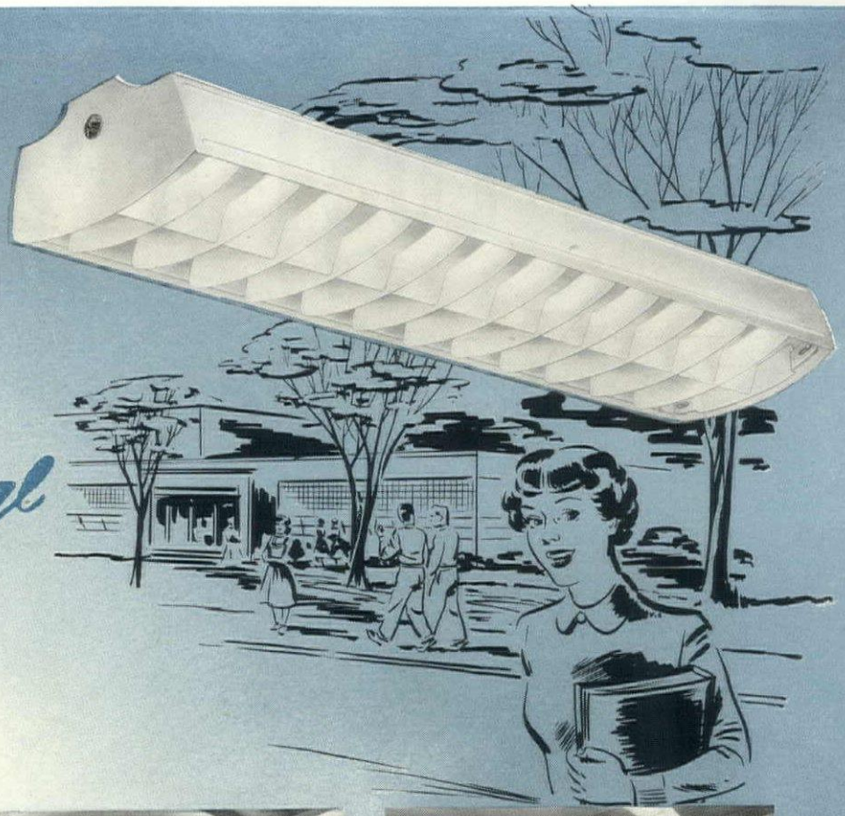
City ..... State .....

American Radiator & Standard Sanitary Corporation, Dept. AF-23, Pittsburgh 30, Pa.

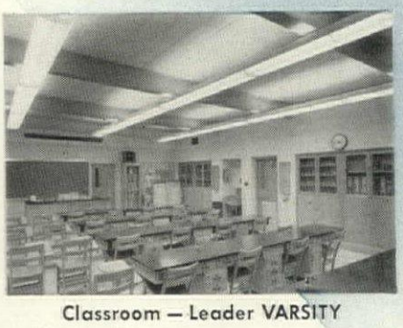
Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS

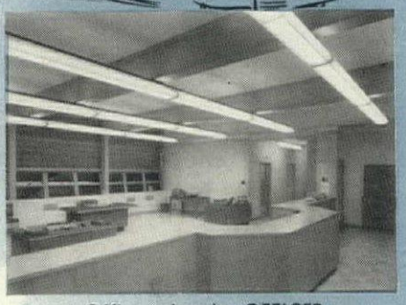
Reavis High School chooses *Leader*



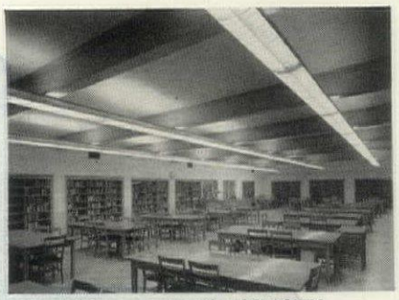
Leader fine lighting for schools is exemplified by the installations made in the recently completed Reavis High School, Oak Lawn, Illinois. Leader fixtures are completely "at home" in these school interiors which embody the latest ideas in modern design. The VARSITY, a luxury fixture at a budget price... the OFFICER, outstanding for efficiency and beauty . . . the CORRI-LITE, unique for attractive lighting of corridors . . . these are some of the Leader units chosen for this beautiful new high school building.



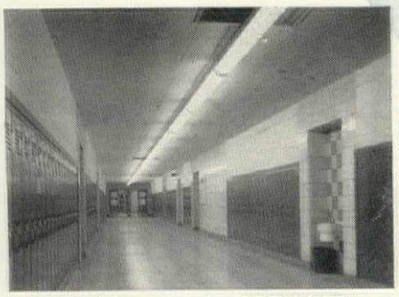
Classroom — Leader VARSITY



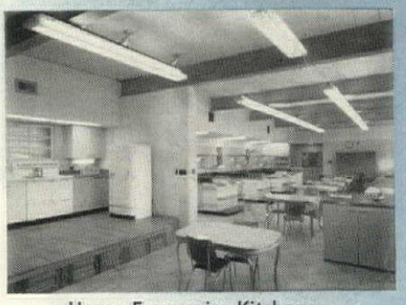
Office — Leader OFFICER



Library — Leader VARSITY



Corridor — Leader CORRI-LITE



Home Economics Kitchens — Leader OFFICER

Check the details on these fine LEADER fixtures:

- **VARSITY** (shown above) — Steel channel, baffle-type steel louvers. Choice of steel or plastic side panels. 25°-35° shielding (other shielding angles on request). For 2 lamps, in choice of 48", 72" or 96" length.
- **OFFICER** — Steel channel, curved translucent plastic side panels. 40° x 40° shielding provided by injection moulded plastic louver. For 2, 3 or 4 lamps, in lengths from 48" to 96".
- **CORRI-LITE** — Channel and unusual style baffles of steel. For single Slimline lamp in 48", 72" or 96" length.

There's a Leader lighting unit for every school need . . . scientifically designed to provide abundant light output, correct shielding, ease and flexibility of installation, economy of first cost and maintenance. If you have school lighting problems, either in new construction or in remodeling, look to Leader for the best solution.

Sold and installed by the better electrical wholesalers and contractors



Leader *America's No. 1 Lighting Equipment Manufacturer*

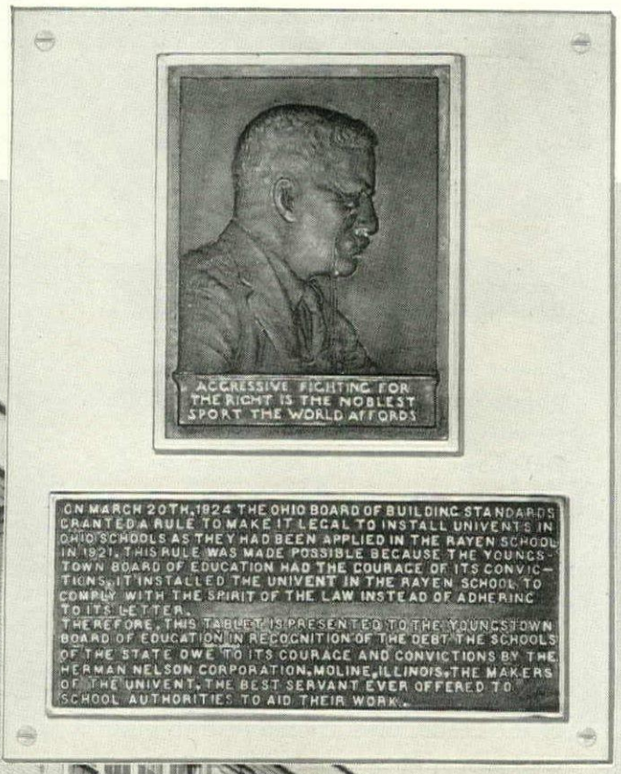
LEADER ELECTRIC COMPANY • 3500 North Kedzie Avenue • Chicago 18, Illinois

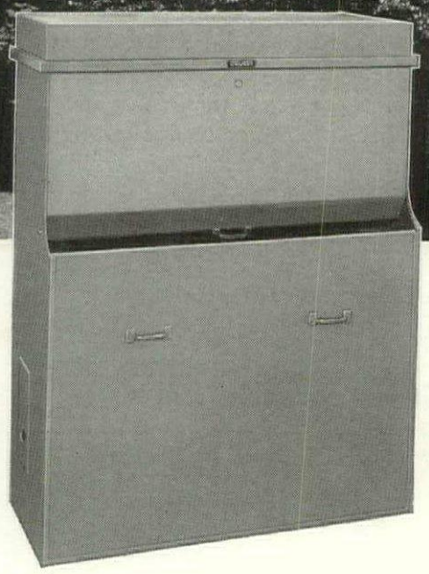
Leader Electric — Western • 800 One Hundredth Avenue • Oakland 3, California

Campbell-Leader, Ltd. • Brantford, Ontario • Canada

WE LOST A $21,000 ORDER

The bronze plaque shown here was presented to the Rayen School authorities to mark the historic decision reached by the Ohio Board of Building Standards in making it legal to install UNIVENTS in Ohio Schools.





1921—the installation of the now famous UNIVENT in the Rayen High School, pictured above . . . marked a new era in practical and healthful heating and ventilating in America's schools. The design of the UNIVENT provided "classroom climate" far superior to anything then available. Even today . . . these same units were found to be in perfect working order. The illustration on the left—shows one of the original UNIVENTS installed in 1921—and still working perfectly.

. . and liked it!

This is a story . . . and a true one . . . of how Herman Nelson lost an order and liked it. This little story will also illustrate very clearly how advanced and how much better HERMAN NELSON equipment is . . . and always has been!

'Way back in 1921 Herman Nelson engineers installed sixty unit ventilators — then called "Univents" — in the Rayen High School at Youngstown, Ohio. Those early "Univents" were engineered to rigid standards designed to solve the ventilating problems of a new school *modern to that era.* They were the best ventilators on the market—years ahead in design!

Thirty years later the Youngstown school authorities, as part of a modernization program, were ready to replace these pioneer "Univents" with new Herman Nelson DRAFT|STOP units.

At this point Mr. S. R. Kreps—who had watched these Herman Nelson "Univents" give trouble-free performance all these years—decided to investigate. Mr. Kreps is Superintendent of Buildings and Construction, a veteran of 40 years in Youngstown schools.

His investigation and subsequent report found: The *original,* 30 year old "Univents" were still performing their daily task of heating and ventilating the school rooms economically and with complete satisfaction. They still met the best ventilating standards according to the needs of this older type school where window glass areas were smaller and draft problems not serious.

Here was the finest testimonial to the farsighted leadership of Herman Nelson equipment possible. It backed up what we have always claimed—that Herman Nelson equipment is years ahead in design. We were pleased with Mr. Kreps' report. We were happy to lose the order.

Of course if you are planning a new school—it will pay you to specify the successor to "Univent"—the Herman Nelson DRAFT|STOP—as far ahead today as was the "Univent" thirty years ago. DRAFT|STOP is a unit ventilator that cools as well as heats and at the same time performs this added task . . . it eliminates drafts characteristic of modern school-rooms with their large areas of glass.

If you are planning a new school or a school modernization program — it will pay you to choose Herman Nelson DRAFT|STOP—the unit ventilator designed to keep children learning—in health and comfort. Please write Dept. AF-2, Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Kentucky.

ELEMENTARY SCHOOL; EAST JACKSON, MICHIGAN. *Superintendent of Schools;* BERTHA L. ROBINSON. *Architect;* BINDA AND HAUGHEY. *Consulting Engineer;* T. MARVIN SAHLIN.



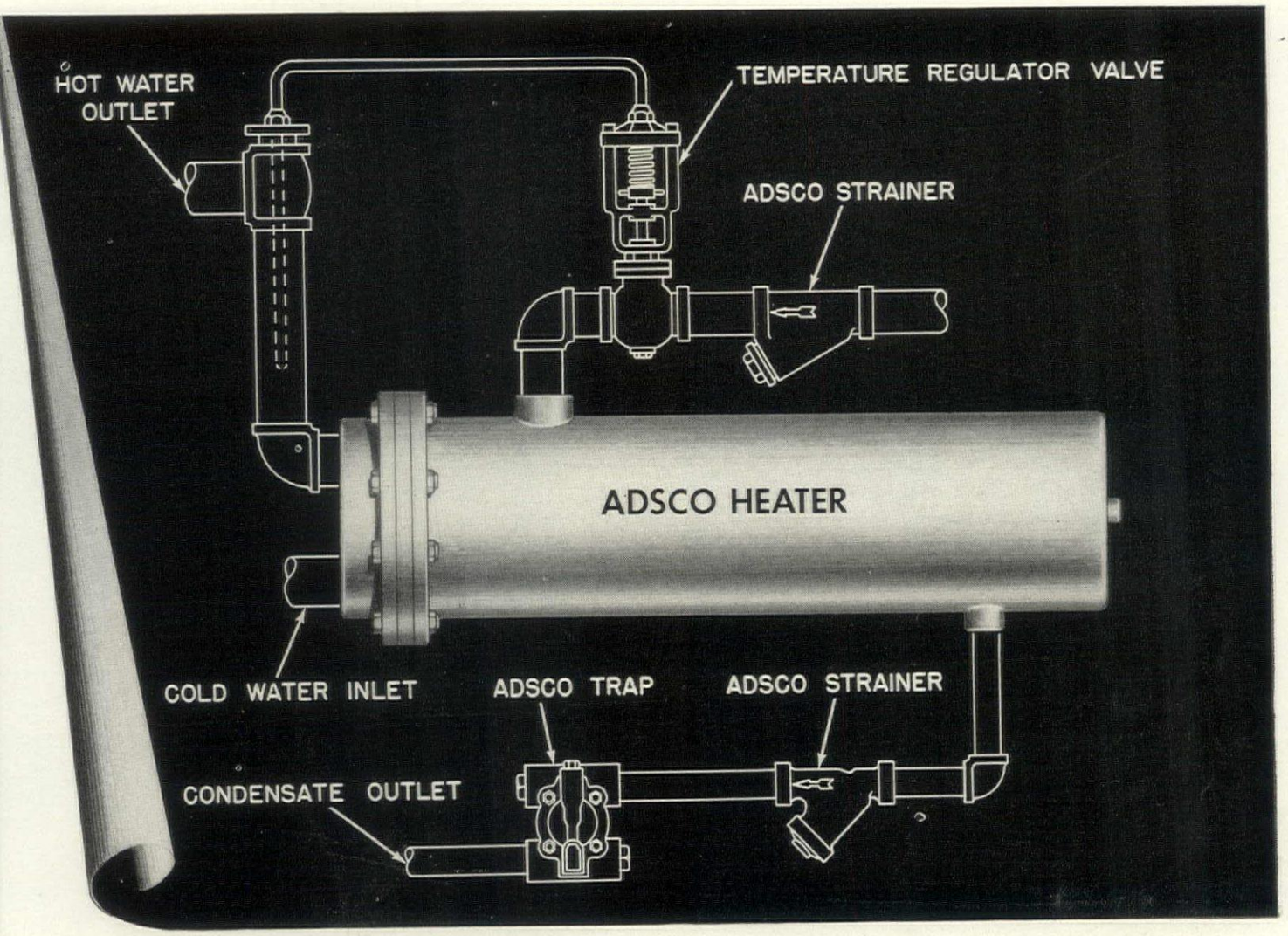
See DRAFT|STOP at the American Association of School Administrators Convention, Atlantic City, February 14-19.
BOOTHS H-46-48-50

1953—the typical modern classroom, pictured above, with its huge window areas presented new and complex heating . . . ventilating and cooling problems. Once again Herman Nelson provided the practical solution with the development of the now widely accepted DRAFT|STOP unit ventilator . . . the finest heating, ventilating and cooling system ever designed!

DRAFT STOP **HERMAN NELSON**

SYSTEM OF CLASSROOM HEATING AND VENTILATING


Solid Olsonite seat Numbers 5 and 10 were specially designed for industrial and commercial installations. Extra-heavy, one-piece construction eliminates joints, seams, and crevices —no weak spots to break or crack. Hinges are covered with matching Olsonite, leaving no exposed metal to rust or corrode. Model Numbers 5 and 10 are available in either white or black, for regular or elongated bowls.
NOT HOLLOW • NOT CONCAVE • NOT CORED... BUT SOLID
Olsonite
SWEDISH CRUCIBLE STEEL CO., Plastics Division
8561 BUTLER AVENUE • DETROIT 11, MICHIGAN
P-4



BLUEPRINT FOR ACTION!

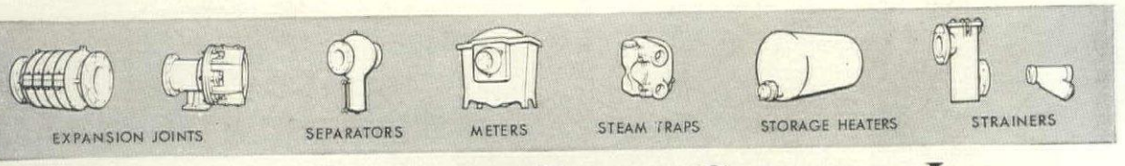
And what action, when you use an ADSCO Water Heater! Hot water . when and where you want it . and at low cost! ADSCO Instantaneous Heaters furnish industry with general service hot water, boiler feed water, and process water. They supply hotels, apartments, office buildings, dormitories, hospitals, and institutions with hot water for showers, washrooms, dishwashers, laundries, and for general cleaning. ADSCO Convertors, a type of instantaneous heater with a shorter temperature range, furnish *all types* of buildings with hot water for quiet, trouble-free space heating systems.

Yes, you get plenty of action — fast action — out of ADSCO Water Heaters. They operate best when connected according to the typical piping arrangement shown above, with two ADSCO Y-type Strainers to protect valuable equipment and an ADSCO Dual Steam Trap to handle condensate efficiently.

ADSCO Water Heaters have only three parts: shell, tube bundle, and cover. All are made to ADSCO's high standards. Steel shells are seamless steel pipe, carefully cut and welded by skilled workmen. The shell flange is sturdy and accurately machined and all openings are precisely located. The tube bundles are made of pure, deoxidized seamless copper tubes formed into U-bends. By means of electrically and automatically controlled equipment, they are rolled and expanded into carefully drilled tube sheets which have a diamond pitch arrangement for spacing of tubes. The semi-steel covers are high-tensile, fine-grain castings.

For further information, write for Bulletin 35-78 on Instantaneous Heaters or Bulletin 35-77 on Convertors.

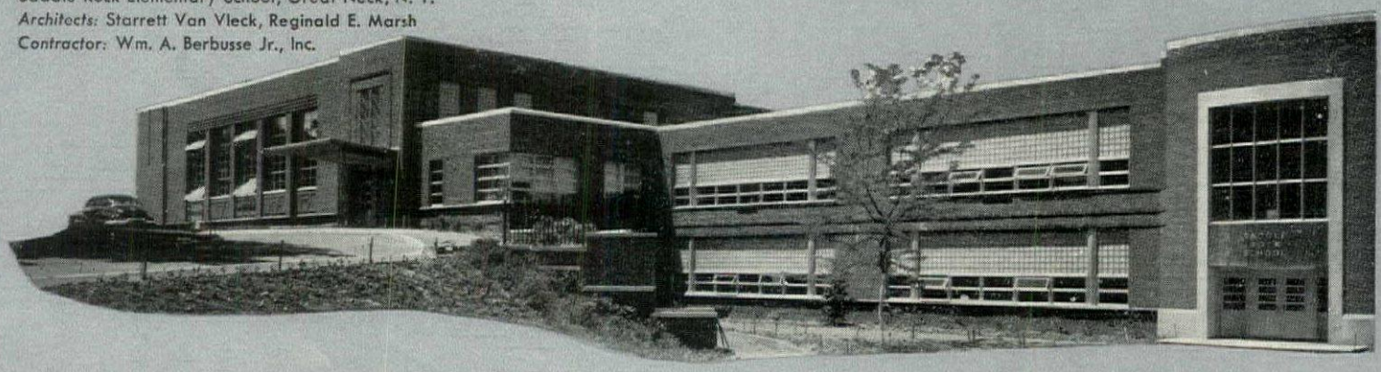
ADSCO ENGINEERED PRODUCTS



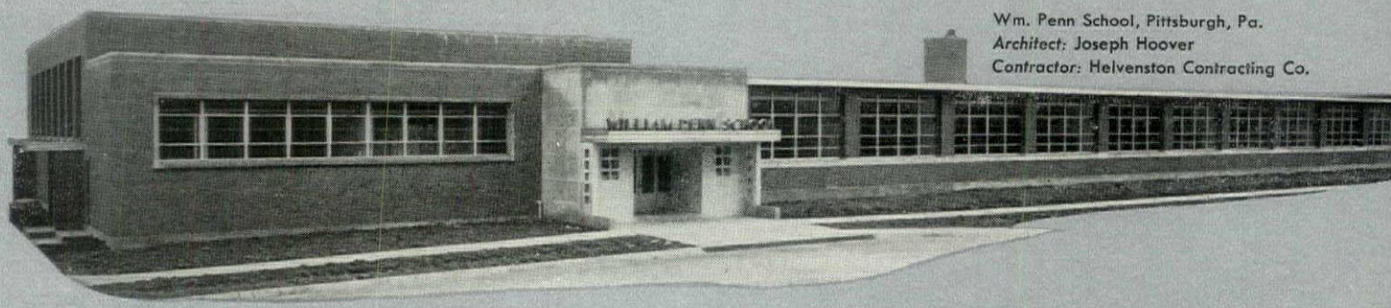
AMERICAN DISTRICT STEAM COMPANY, INC.
NORTH TONAWANDA, NEW YORK
Since 1877

Your new SCHOOL BUILDING . . . but make sure it has . . .

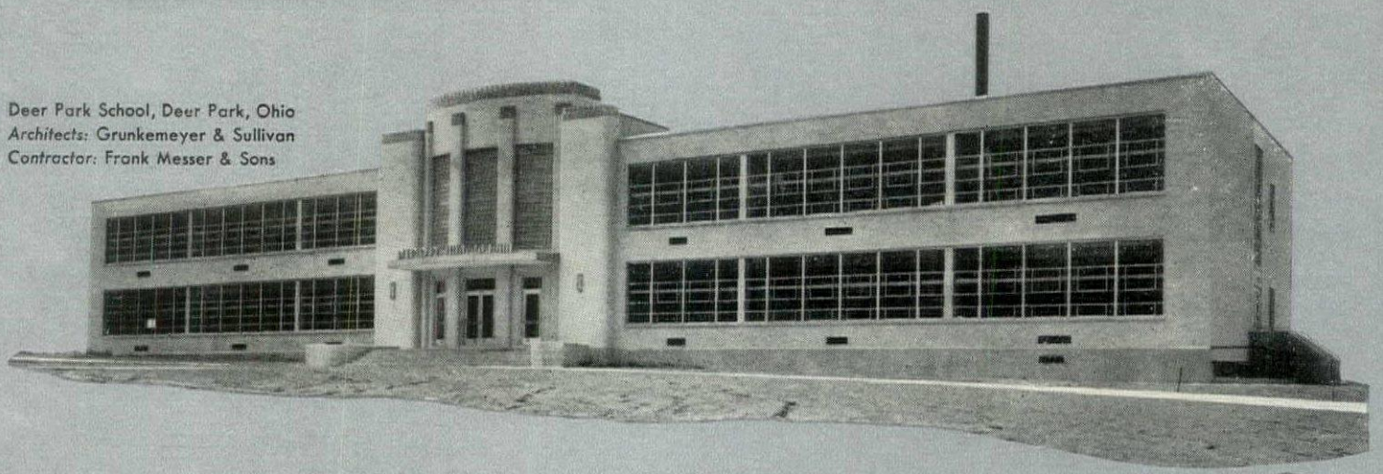
Saddle Rock Elementary School, Great Neck, N. Y.
Architects: Starrett Van Vleck, Reginald E. Marsh
Contractor: Wm. A. Berbusse Jr., Inc.



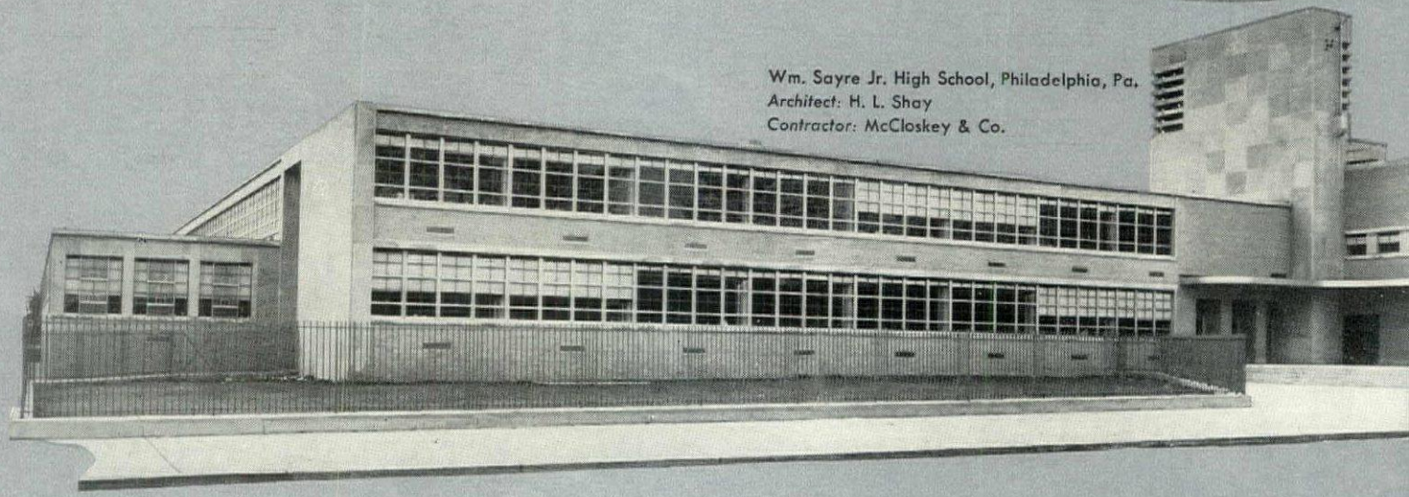
Wm. Penn School, Pittsburgh, Pa.
Architect: Joseph Hoover
Contractor: Helvenston Contracting Co.



Deer Park School, Deer Park, Ohio
Architects: Grunkemeyer & Sullivan
Contractor: Frank Messer & Sons



Wm. Sayre Jr. High School, Philadelphia, Pa.
Architect: H. L. Shay
Contractor: McCloskey & Co.



. design it any style you like

. *Quality Approved*

ALUMINUM WINDOWS

If you want lowest maintenance costs!

Building design and style may vary, depending upon local requirements and taste. But if you want to make sure of lowest possible maintenance costs, be sure you insist upon "Quality-Approved" aluminum windows.

No other building material adds so much to a building's appearance —or subtracts so much from its maintenance budget.

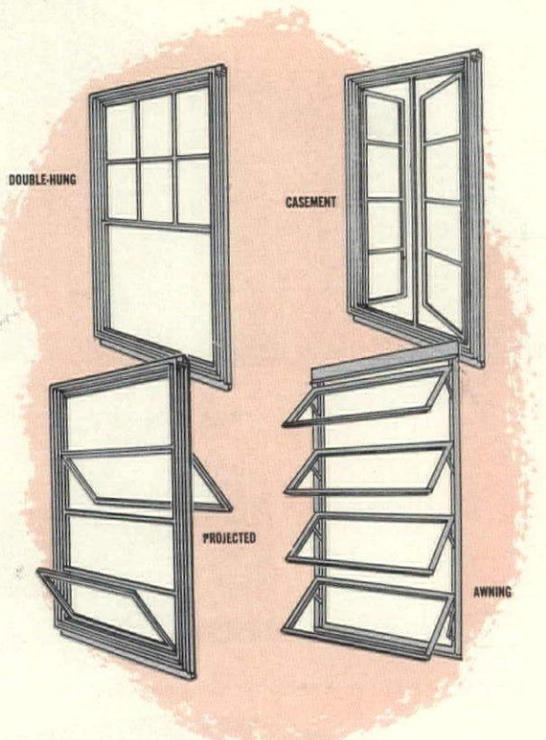
"Quality-Approved" aluminum windows help reduce school operating costs—save important maintenance dollars year after year. They cannot rust or rot—never need painting or costly repairs. They always operate without trouble and remain beautiful for the life of the building.

"Quality-Approved" aluminum windows are available through many manufacturers in sizes and styles (double-hung, casement, projected and awning) to fit any design treatment.

For copy of our Window Specifications book and names of approved manufacturers, see Sweet's (17a/ALU) or write to Dept. AF-2.

Aluminum Window Manufacturers Association

74 Trinity Place, New York 6, New York





INSIST ON THIS SEAL FOR YOUR PROTECTION

TESTED For Quality Materials



TESTED For Sound Construction



TESTED For Strength of Sections



TESTED For Low Air Infiltration



MODERN COMMERCIAL BUILDINGS

Built Better with West Coast Lumber...

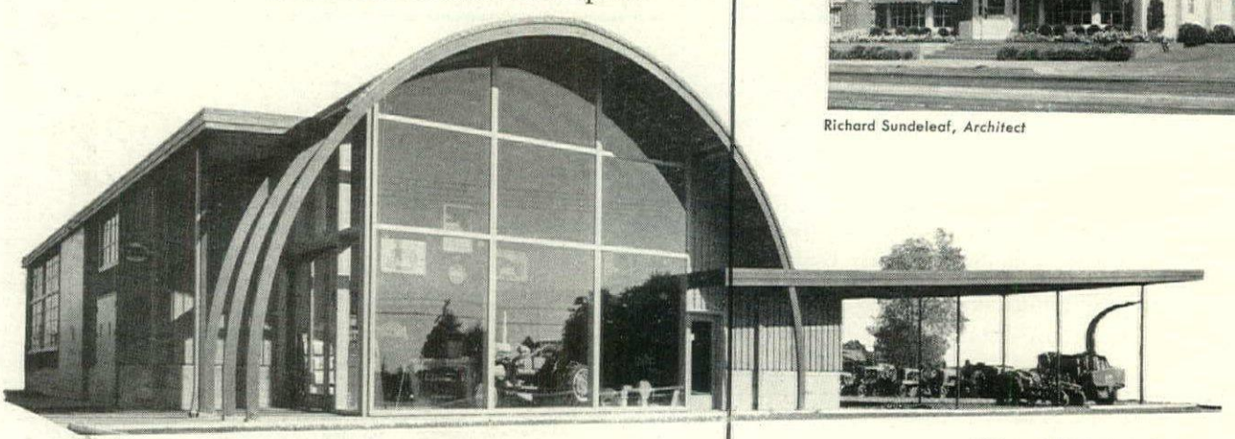
Striking individuality is the keynote of today's modern commercial buildings of wood. These attractive structures command attention and promote business for your progressive clients. Speed of construction means earlier occupation of the building... economy of construction means less capital investment, more available operating capital for the business concerned. Specify wood for the next modern commercial building you design—take advantage of its natural strength, beauty and versatility. And for consistently dependable lumber specify time-tested West Coast Woods... Douglas Fir, West Coast Hemlock, Western Red Cedar and Sitka Spruce.



Morton H. Ceine, *Architect*



Richard Sundeleaf, *Architect*



Wilmsen & Endicott, *Architects*



Lawrence B. Rice, *Architect*

The Economical Building Material from Ever-growing Forests

WEST COAST WOODS } Douglas Fir, West Coast Hemlock, Western Red Cedar, Sitka Spruce

Lumber of Quality Produced by Members,
WEST COAST LUMBERMEN'S ASSOCIATION

SEND FOR FREE BOOKLET ON MODERN COMMERCIAL BUILDINGS

Attractive, 2-color, 12-page booklet filled with photographs of representative commercial buildings of wood. Architects point out why they specified wood for the particular building they designed. Excellent source material for your files. Ask for as many copies as you need.



WEST COAST LUMBERMEN'S ASSOCIATION
1410 S.W. Morrison, Room 417, Portland 5, Oregon

Please send me_____copies of your FREE booklet "MODERN COMMERCIAL BUILDINGS".

Name_____

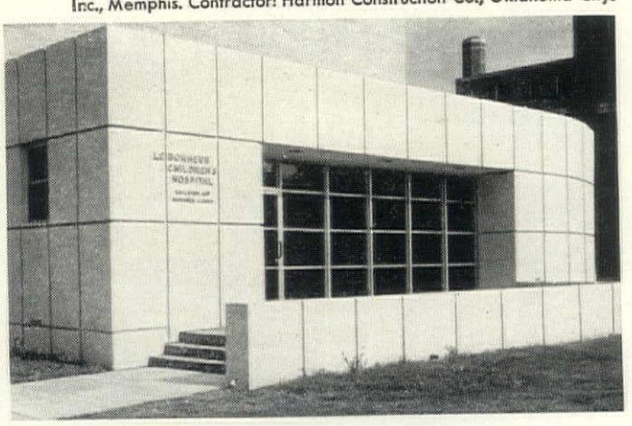
Address_____

City_____

Zone_____ State_____



Aggregate transfer imparts a warm yellow to spandrels and floor edges (above) and entrance walls (below) of the Le Bonheur Children's Hospital, Memphis. The same colored aggregate and pigment were used in column concrete. Architect: J. Frazer Smith, Inc., Memphis. Contractor: Harmon Construction Co., Oklahoma City.



Aggregate Transfer Method adds Warmth and Color to Architectural Concrete

Aggregate transfer is a simple, economical method that enables the architect to design enduringly beautiful buildings in architectural concrete with the added warmth of color. Information describing this method is available in a free, 12-page booklet distributed only in the United States and Canada.

Our technical staff will help architects obtain desired results from this method or any phase of concrete construction.

PORTLAND CEMENT ASSOCIATION
Dept. A2-7, 33 West Grand Avenue, Chicago 10, Illinois
A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Sanymetal*

*Trade Mark Reg. U. S. Pat. Off.

RECOMMENDS AND USES

GALVANIZED AND BONDERIZED*

Galvanized, Bonderized* steel is furnished only when specified because this highly corrosion resistant steel costs, on the average, fifty percent more than plain steel without this treatment, ***but the installed cost of toilet compartments of this material is only approximately ten percent more.***

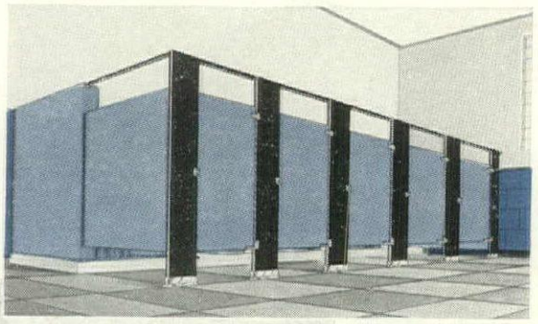
. . . Lasts three to five times longer

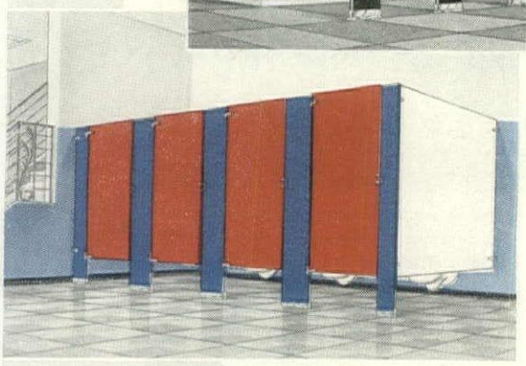
Galvanized, Bonderized* Steel is notable for: (1), the positive adhesion it provides for synthetic enamel when baked-on to the basic metal, and (2), for enduring resistance to corrosion. *There is a considerable difference in durability or service life between a sheet of basic metal that has been galvanized and Bonderized* and a bare untreated sheet of metal, or a sheet of metal that has been given only a Bonderized* coating.* A Bonderized* coating applied directly to the basic metal, *without a galvanized coating under it,* does not provide the degree of corrosion resistance that Sanymetal considers to be necessary for the construction of toilet compartments. Sanymetal recommends and always uses galvanized and Bonderized* steel when it is specified for toilet compartments with baked-on enamel finish.

. . . Costs less for extra years of service life

Whatever saving in first cost the use of a material, such as untreated cold rolled steel, may effect, it is likely to be entirely wiped out by: (1), the increased cost of maintenance and (2), by cost of a replacement required at an earlier period due to untimely depreciation of a material having a relatively shorter service life than galvanized, Bonderized* steel. When a sheet of basic metal has been fully protected by a galvanized coating *and a Bonderized* coating,* it is given a primer coat and finish color coats of synthetic enamel baked-on, which provide more protection for the basic metal and give a perfectly smooth, lustrous, protective finish.

**Treated with "Bonderite", a product of Parker Rust Proof Company.*

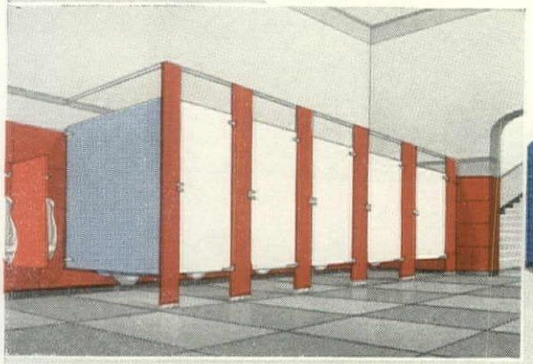




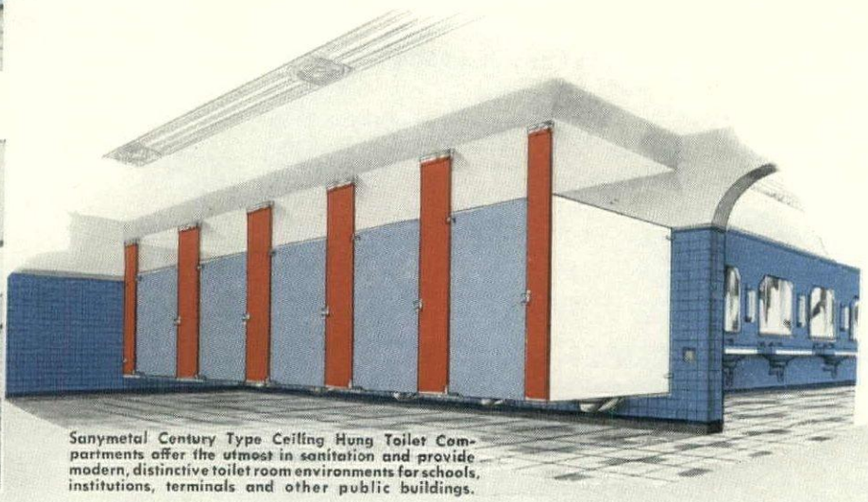
Sanymetal Academy Type Shower Stalls and Dressing Room Compartments provide the utmost in sanitation for gymnasiums, stadium dressing rooms, Y.M.C.A.'s, clubs, trailer camps and tourist motels, etc.

Sanymetal Normandie Type Toilet Compartments endow a toilet room environment with dignity and good taste.

Sanymetal TOILET COMPARTMENTS KEEP REST ROOM ENVIRONMENTS NEW...ALWAYS!

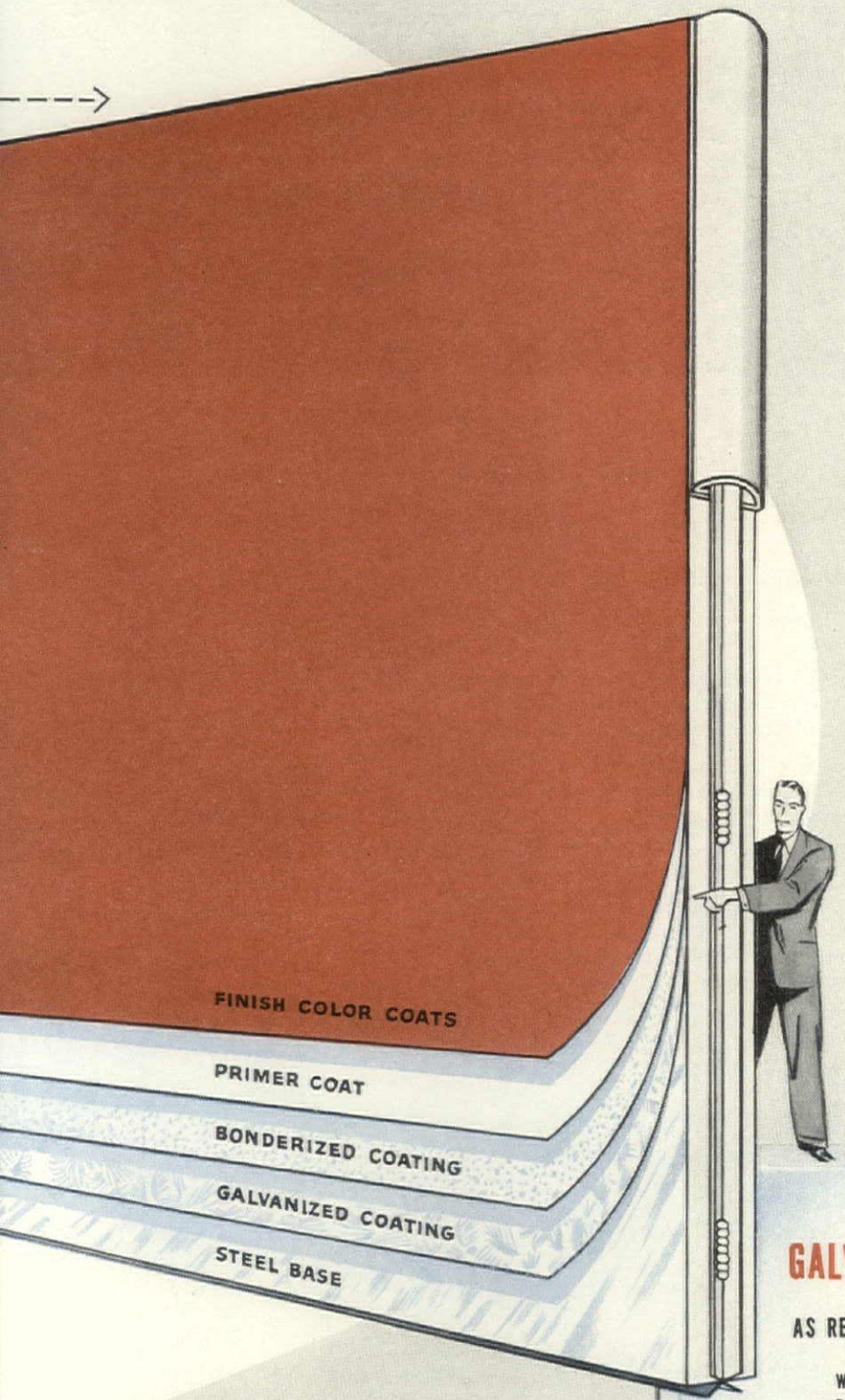


Sanymetal Academy Type Toilet Compartments are suitable for conservative but modern toilet room environments.

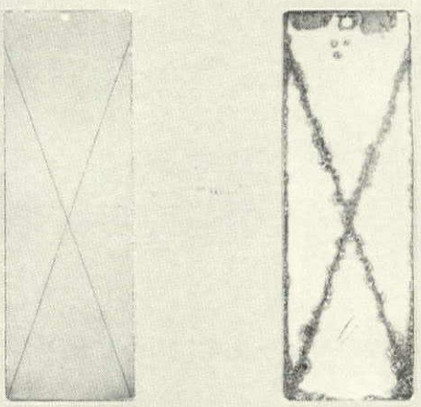


Sanymetal Century Type Ceiling Hung Toilet Compartments offer the utmost in sanitation and provide modern, distinctive toilet room environments for schools, institutions, terminals and other public buildings.

STEEL *for Toilet Compartments with baked-on enamel finish*



PAINT-HOLDING TEST REVEALS A DIFFERENCE OF UTMOST IMPORTANCE BETWEEN PLAIN STEEL AND GALVANIZED, BONDERIZED* STEEL



An eighteen month outdoor test demonstrates superior paint-holding quality of galvanized, Bonderized* steel. The 4" x 12" samples were scratched diagonally after being painted at the same time with the same paint and exposed together to outdoor atmosphere for eighteen months. The sample at the right shows how the paint fell away and the surface of the exposed steel became corroded. The base metal was ordinary cold rolled steel, untreated before painting. As paint loses its adherence, due to corrosion taking place on the untreated surface of plain steel underneath the film of paint, scratch marks become wider and the paint flakes off around them. The scratches on the sample to the left did not lessen the adhesion of the paint nor cause the paint to flake or peel away because the base metal is galvanized, Bonderized* steel, which is highly corrosion resistant.

Another test in which samples were exposed in an industrial atmosphere for a period of two years revealed similar results.

Specify

GALVANIZED, BONDERIZED* STEEL

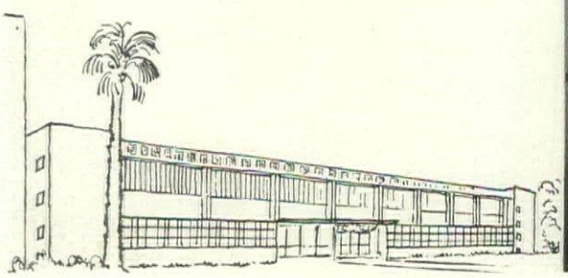
AS RECOMMENDED AND USED BY *Sanymetal*

Write for Booklet on "Why Toilet Compartments of Galvanized, Bonderized* Steel Last Three to Five Times Longer."

THE *Sanymetal** PRODUCTS CO., INC. • 1687 URBANA ROAD
CLEVELAND, OHIO

*Trade Mark Reg. U. S. Pat. Off.

ACOUSTICAL MATERIALS AT WORK





ARIZONA STATE TEACHERS COLLEGE, Tempe, Arizona

Architect: Edward Varney

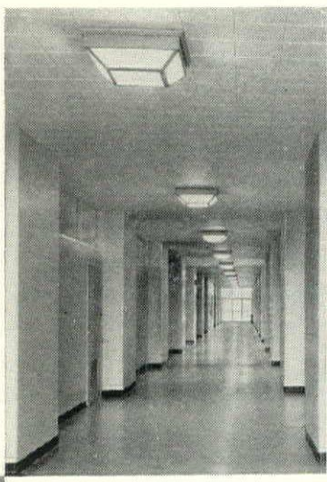
General Contractor: Daum-Donaldson Construction Co.

Acoustical Contractor: Barrett & Homes

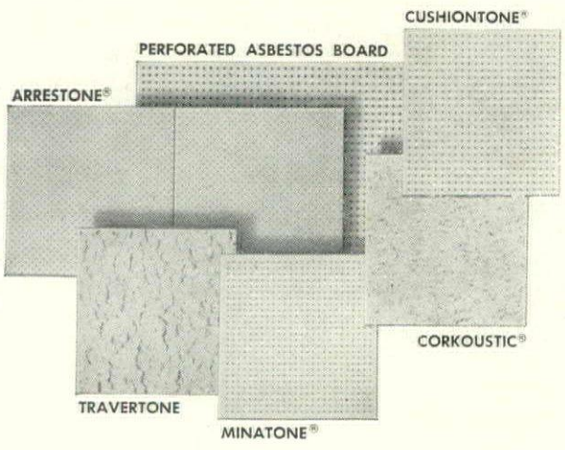
Low-cost, functional design characterizes the new Administration Building at Arizona State Teachers College. In the lobby, the open architectural plan is made more practical by the sound-absorbing ceiling of Armstrong's Cushiontone.

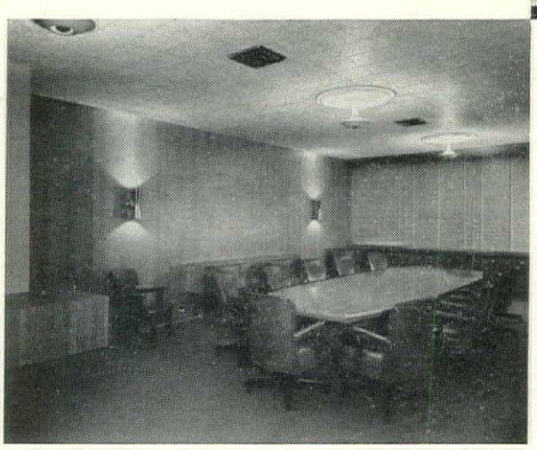
Cushiontone, a perforated wood fiber tile, has also been installed throughout the classrooms, laboratories, and hallways of the building. Its high acoustical efficiency and low cost made it a logical selection for the architect. Other important features of Cushiontone are its repaintability, high light reflectivity, and ease of installation and maintenance.

Armstrong offers the most complete line of acoustical materials available. Your Armstrong Acoustical Contractor will be glad to give you free, expert assistance with any of your sound-conditioning problems. For the free booklet, "How to Select an Acoustical Material," write to Armstrong Cork Company, 5402 Stevens Street, Lancaster, Pennsylvania.



Noisy footsteps and voices were quieted in Cushiontone-treated corridors like this.





For extra beauty, a ceiling of Armstrong's Travertone was selected for the Board of Regents Conference Room.

ARMSTRONG'S ACOUSTICAL MATERIALS

Ikemen begin killing controls, try to cut federal construction

It was the biggest month of change for construction since the Korean war. In its first four weeks in office, the Eisenhower administration acted decisively to apply Republican ideas to the nation's economy:

▸ The Treasury, refunding $8.8 billion of the national debt, moved to let interest rates slide upward by exchanging 1⅞% treasury certificates for $619 million of medium-term bonds at 2½% and $8.1 billion one year certificates at 2¼%.

▸ Prices, wages and production were freed from controls that industry had cried so long were unnecessary (see below).

▸ Budget Director Joseph Dodge jarred the vast federal bureaucracy from top to bottom with a major economy drive (see p. 42). It included orders to review and reduce federal construction, clamped a semi-freeze on hiring.

▸ Charting the future, President Eisenhower recommended that rent control be allowed to die April 30 except in "so-called defense areas" (see col. 3). There seemed little doubt that Congress would agree, although the President's remarks were so vague there was confusion over exactly what he really meant.

Yet none of the actions seemed likely to do much to push the US economy off what White House economists call its present "knife-edge." Eisenhower set the course in his state of the union address: "It is axiomatic that our economy is a highly complex and sensitive mechanism. Hasty and ill-considered action of any kind could seriously upset the subtle equation. . . . Action must be gradual."

Most economists thought a high level of construction was still an indispensable part of prosperity that the GOP must maintain or risk losing its political power.

CMP open-ended; wage, many price controls die

Said Dwight Eisenhower in his guidepost state-of-the-union message: "The weight of evidence is clearly against use of controls in their present forms. . . . Accordingly, I do not intend to ask for a renewal of . . . wage and price controls on April 30. . . . Meantime, steps will be taken to eliminate controls in an orderly manner. . . . Material and product controls should be ended except with respect to defense priorities and scarce and critical items essential for our defense."

The orderly elimination sped into being so fast it left bureaucrats gasping. Cried one officeholder: "I don't know where we're going, but we're damn sure on our way." In two weeks, the new administration made these sweeping changes in controls that affect construction:

Prices—Ceiling prices were abolished on all but 17% of the items (weighted by value) that go into BLS' cost of living Consumer Price Index. Over half the items on BLS' wholesale price index were freed from controls. Among them: building materials (except metallic products), property management, construction services, prefabricated housing and other buildings, scrap metals. (Scrap copper went up 5¢ a lb.) Price lids so far remained on steel, aluminum and copper. Decontrol policy, said officials of the fast-shrinking stabilization agencies, would be to mix both hard- and soft-priced commodities together in successive waves of decontrol orders to soften the over-all impact.

Wages—Salary and wage controls were abolished entirely. With most construction labor contracts coming up for renewal in the spring, this could have a big effect on building costs. AFL President George Meany, a former building trades man, was already on record that restudy of contracts was in order. Ass't Managing Director J. D. Marshall of the AGC, however, contended the end of wage controls would make little difference. One reason: "Union leaders felt if they did not get the maximum of the government's permissive increase, they weren't doing a good job for their members." Now, there will be no such goal.

Materials—The Defense Production Administration was abolished—so fast that several top DPA men from the old administration had no advance warning. Dismantling of the Controlled Materials Plan began as Acting ODM Director Arthur Flemming ordered CMP open-ended at once. That meant anyone willing to gamble on getting on a mill schedule could proceed with any kind of construction without federal permission.

Another effect of open-ending was to void NPA's main enforcement weapon against violators of CMP orders: a reduction in future allocations. With a chance to get metal from CMP's open end, violators' plight was far easier, although steel mill schedules were still fairly tight. Notably, ODM did not give up its control over the level of production of different kinds of steel. It announced production directives will continue through June 30, when the Defense Production Act expires.

The administration had not yet made up its mind what kind of new production controls law to seek from Congress. For political reasons, the name CMP would probably be abolished. But much of its technique might remain. Best guess: a limited reporting and allocating machinery for military and atomic use, perhaps including use orders and prohibition orders to control scarce alloys. The outlook for construction steel, copper and aluminum was no hindrance at all.

TIME: *John Zimmerman*



NOMINATED AS HHFAdministrator by President Eisenhower on Feb. 25 was Albert M. Cole, 51, of Holton, Kan., avowed public housing opponent. Cole is known as a country lawyer of forthright views, so much so that he was defeated for re-election to the House of Representatives last November. Reasons: he ignored political expediency to vote according to his convictions for a flood control project adversely affecting part of his district, and for removal of the federal oleo tax despite dairymen's opposition. In the House he served on the Banking and Currency Committee, which handles housing legislation.

Congress ponders what Ike meant on rent control

What did the President want to do about rent controls? In his state-of-the-union message, he declared: "I recommend the continuance [beyond April 30] of the authority for federal control over rents in those communities in which serious housing shortages exist. These are chiefly the so-called defense areas. In these and all areas the federal government should with-

draw from control of rents as soon as practicable. But before they are removed entirely, each legislature should have full opportunity to take over, within its own state, responsibility for this function."

The puzzle revolved around what Gen. Eisenhower meant by defense areas—the 131 critical defense housing areas where full-scale rent controls were in effect, or these plus 130 more defense rental areas which by local action kept more limited rent control alive after last Sept. 30. The 131 defense areas (pop. about 12½ million) were created to cope with Korean war-housing shortages. The others (pop. about 34 million) were what is left of World War II rent control.

With no clarification forthcoming from the White House, pressure mounted for continued strong federal controls. Rep. Barratt O'Hara (D, Ill.) introduced a bill to extend controls to April 30, 1955. The local administrator asked that rent lids be kept in Washington, D. C. Likeliest of enactment was Sen. Homer Capehart's standby controls bill which included rent control. Hearings were set for late in the month. If Congress passes it, rent control would die April 30 in all 261 areas, but could be revived at presidential discretion.

Most federal agencies cry 'who, me?' as budget boss demands economy in building

When the Eisenhower administration decided to make good on its promise to cut down on the cost of running the government, building men joined in the general applause. The order was tough and explicit. Budget Director Joseph M. Dodge forbade government departments from exceeding their January rate of spending without his approval, clamped a semi-freeze on hiring, demanded a review of "existing programs" to cut expenses.

On construction, Dodge announced: "It is the policy to proceed only with projects which are clearly essential, and on such projects to employ the strictest standards of economy. All proposed or authorized construction projects on which work has not yet begun are to be reviewed and construction initiated only on those projects which meet these criteria. All going construction projects are to be reviewed according to the same criteria and appropriate action taken, *including action to stop the work* if this appears advisable." By March 2, department heads must report how they are retrenching.

AGC approval. Typifying industry reaction was the response of AGC President Arthur S. Horner: "We believe that it is sound procedure to examine all public works—and other federal expenditures—and proceed only with projects which are clearly essential. This will give further assurance to the public that funds . . . are expended economically."

But there was an underlying feeling of uneasiness among construction quarters. How long would awards of federal construction contracts be shut off? The federal public works program totaled $5.8 billion for the current fiscal year—about one-fifth of the nation's building. If no awards were made for several months, would the delay offset economies? Contractors faced with the prospect of not getting the go-ahead signal until later in the year, with less good building weather remaining, could be expected to raise their bids.

Freeze in defense. First indication of how thoroughly Ikemen meant business came from the Defense Dept., whose construction had most often been criticized for waste by Congress. Secretary Wilson ordered the Corps of Army Engineers and the Navy's Bureau of Yards and Docks:

1) Not to award any more construction contracts after Feb. 7; 2) to compile lists of all work underway or contemplated with recommendations as to what could be canceled without impairing the national interest; 3) submit to Director of Defense Installations Frank Creedon a tabulation of "essential" projects which were not more than 20% completed on Feb. 10; 4) take the initiative in halting any project already commenced not considered absolutely necessary.

During the freeze, the services would be permitted to continue design work. They could keep on advertising for and accepting bids. Where military work of the utmost importance was involved, they could submit special appeals to the secretary for permission to proceed before the general all-clear signal.

NEW CONSTRUCTION ACTIVITY
(expenditures in millions of dollars)

Type	January '52	January '53	Per-cent change
PRIVATE			
Residential (nonfarm)	719	826	14.9
Industrial	209	187	—10.5
Commercial	83	105	26.5
*Total	1,517	1,623	7.0
PUBLIC			
Industrial	92	112	21.7
Military	91	105	15.4
Residential	63	45	—28.6
*Total	657	685	4.3
*Grand Total	2,174	2,308	6.2

Source: Joint estimates, Labor and Commerce Depts. * Minor components not shown, so total exceeds sum of parts.

CONSTRUCTION EXPENDITURES last month totaled $2.3 billion, the biggest January ever tallied and 6% ahead of last year. Private construction topped $1.6 billion (7% ahead of last January). Public dollar volume was $685 million (4% ahead of a year ago). The private gains were caused chiefly by the boom in houses and commercial construction.

Skin-deep change? As the services began carrying out the order, there were plenty of signs that economy-thinking had not penetrated far. The Corps of Engineers suspended new awards for military construction. But it deferred similar action on rivers and harbors work and flood control, long favored by Congress.

Said R. Adm. Joseph Jelley, chief of the Navy Bureau of Yards and Docks: "The Navy only has 150 construction projects that will reach the bid-letting stage in the next six months. Their total cost is expected to come to $300 million. It is doubtful that any of this work will be stopped after we have reviewed it."

The AEC, which ranks next to the military services in direct federal spending, withheld comment. Its construction expenditures estimated at $1.1 billion for the current fiscal year and tentatively fixed at $1.6 billion in the farewell Truman budget, were expected to remain substantially unchanged.

The Veterans Administration was taking another look at its hospital program but doubted that it could do much economizing. VA had 15 new hospitals and 3 major additions (est. cost $189½ million) under construction. It relied on pressure from Congress and veterans' groups to balk any real curtailment. It only had one new building ready to go—a 1,000-bed neuropsychiatric hospital in Cleveland.

$2 billion backlog. The only other federal agency which spends big money for building, the General Services Administration, sadly noted that the moratorium for them began 12 years ago. Even before World War II, public building came to a virtual standstill because of the greater importance of defense. The job of providing new living quarters for government agencies across the nation has not really been resumed since, except for a few must projects. One was the new general accounting office in Washington, completed last year and promptly grabbed by the DPA and NPA. At the last count, GSA had a $2 billion backlog of authorized projects.

On construction involving federal aid, there was an air of uncertainty whether much economizing could be managed until Congress goes to the mat with the new budget. The question: since such work is handled by state or local agencies and involves large amounts of their own money, would it be proper for the federal government to welch on its part of the deal? More-

over, city fathers were beating on the doors of the Civil Aeronautics Administration for more airport aid money—which Truman budgeted for an increase from $14 to $30 million a year in his farewell budget. Local pressures for more highway aid mounted as the US road network fell farther and farther behind the supply of autos.

Public housing as usual? If such reasoning was plausible for joint activities where states and localities chip in on a fifty-fifty basis, it was stretching things to view the public housing program on the same basis. Unabashed, PHA proclaimed that its program for the current fiscal year was untouchable since its 35,000 units permitted by Congress were already commited, even though local contributions are virtually nil.

On balance, how much would the retrenchment drive really trim federal public works? For fiscal 1954, federal public works including loans and grants had been fixed at $6.6 billion by the outgoing administration. Realistic observers thought a 10% cutback would be optimistic. Many doubted there would be more than a token stoppage of work in progress. Moreover, the Air Force and AEC were readying still more construction plans to the tune of almost $2 billion. While these proposals would undoubtedly be drastically reduced by top Ikemen, would either the Budget Bureau or Congress take the risk of entirely banning new work military men claimed was urgent? It looked as if the Eisenhower administration would have its hands full cutting federal construction.

ORS suspends three after 'fire-rehire' pay exposé

In typical fashion, whispering Sen. John J. Williams (R, Del.) told the Senate he had caught the Democrats with their hand in the cookie jar again. He charged that the Rent Stabilization Office fired 49 permanent employees on June 25, 1950, paid them $86,260 annual leave due them, then rehired all 49 next day at their old salaries, same jobs.

Williams said ORS General Counsel Edwin D. Dupree Jr. got one of the biggest payments, $3,654. Others, he charged, ranged from $330 to $3,681. Although nobody was accused of breaking the law, ORS took prompt action. William G. Barr, taking over as acting rent director when James McI. Henderson resigned, suspended Dupree and two other agency executives.

Congress had unknowingly closed the loophole in the law which permitted the firing-hiring when it reorganized the system of annual leave last year. The change provided that bureaucrats cannot accumulate annual leave, cannot be rehired after leaving until their annual leave expires.

Defense Dept. adopts new plan for choosing architects, engineers; keeps fee scale secret

For years the Defense Department had used a method of determining payments for professional architectural and engineering service that the AIA and the ASCE considered arbitrary and inadequate. Firms given military assignments were paid on the basis of their estimated costs plus 10%. Architects felt the armed services tended to underappraise items like overhead, partners' time, and contingencies. Moreover, since Korea, the design professions complained, some defense agencies were shifting to competitive bidding, putting architects on the same basis as nuts and bolts.

Last month, the Pentagon proudly proclaimed that the Army, Navy and Air Force construction agencies had adopted a uniform system that should make everybody happier. The sole criterion would be the professional qualifications of a firm—based on its history, location, capacity to finish on time, and existing volume of defense work. Procurement officers would list firms they think can handle each job, negotiate with them in order of preference.

But when architects and engineers took a close look at the Defense Department orders on how to negotiate fees, doubts arose that the deal was really new.

The new plan was built around cost curves that the Corps of Engineers and Bureau of Yards & Docks had been preparing for years. Included was a sliding scale for fees, starting below 10% for easier jobs and going somewhat above it for difficult ones. But the military clamped secrecy on all the details, pleading that this would hamper their bargaining. For work that could not be related to previous construction experience, such as foundation surveys or master planning, the individual appraisal method would still be followed. A lot of architects were still unhappy.

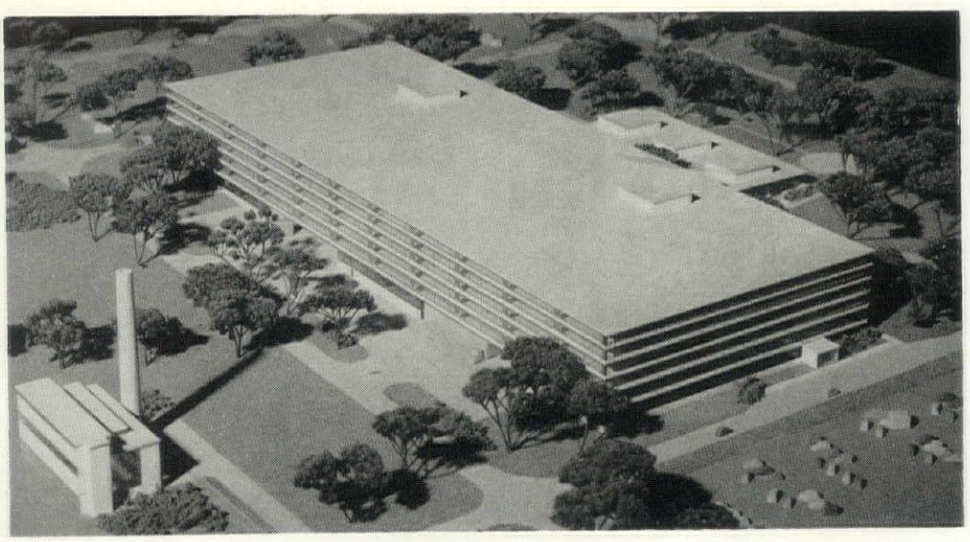
AIA begins 3-yr., $100,000 public relations program

AIA's three-year, $100,000 public relations program got into motion last month. Its twofold aim: making the public more familiar and more appreciative of architects' work; educating architects in the fundamentals of good public relations.

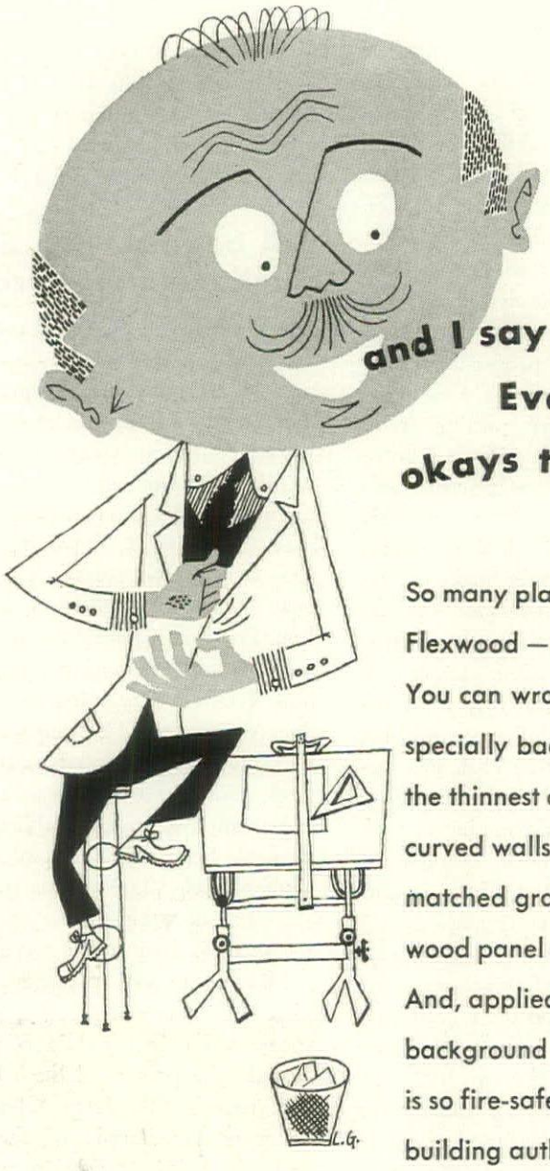
The education began Jan. 22-24 at sessions of the Gulf States regional council, New Orleans chapter and Louisiana Architects Assn. Walter Megronigle of Ketchum Inc., Pittsburgh public relations firm hired to direct the national program, explained how Ketchum representatives will circulate among regional AIA groups and eventually individual chapters to advise them of techniques, arrange workshops and clinics, issue information sheets and publicity instruction packets. Reported Gulf States AIA Director Walter Eichenbaum: listeners were "inspired," called the sessions "one of the finest instances of the institute serving members."

Megronigle helped the regional council plan the theme and pick its fall conference speakers for best public relations results. Sample: he persuaded them to change the conference's title from "Regionalism" to "Serving the People of the New South through Architectural Progress."

Chairman John W. Root of AIA's public

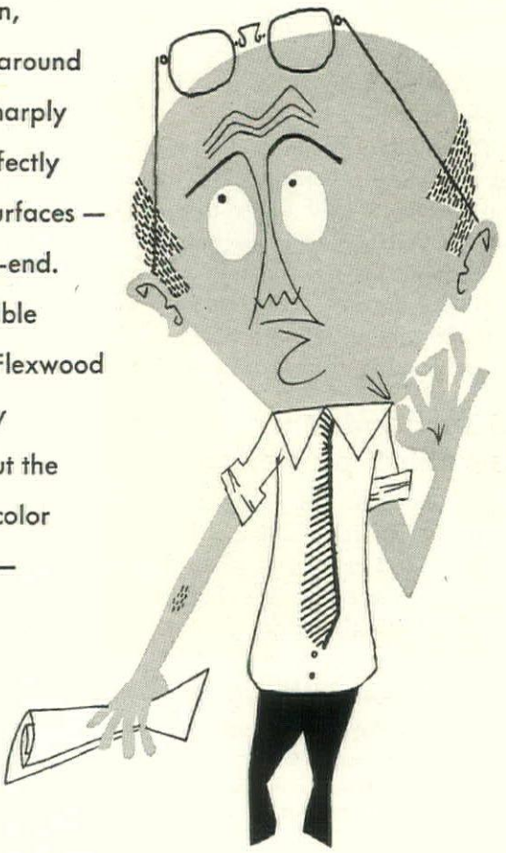


MILITARY RECORDS CENTER to be erected near St. Louis will have "austerity modern" design to conform with Army Engineer Corps specifications. Six-story reinforced concrete structure (model above) will be faced with bands of windows and masonry block without facing brick. It will not be air-conditioned. Except for service cars it will have escalators instead of elevators, 1,500 parking spaces for its 4,000 employees. The project will have about 1,340,000 sq. ft. of floor space, may cost $16 to $20 million. Designers are Associated Architects & Engineers of St. Louis: Hellmuth, Yamasaki & Lienweber; John D. Falvey; William C. E. Becker.



and I say you can use FLEXWOOD anywhere. Every code in the country okays this wood panelling.

So many places you can use Flexwood — and so many ways. You can wrap these super-thin, specially backed rare woods around the thinnest columns — over sharply curved walls. You can get perfectly matched grains over larger surfaces — wood panel a room in a week-end. And, applied to an incombustible background such as plaster, Flexwood is so fire-safe it is approved by building authorities throughout the country. Mail coupon for full-color Flexwood Case History Book — and a sample.



flexwood

Reg. U. S. Pat. Off.

CHOICE WOOD IN FLEXIBLE SHEETS

United States Plywood Corporation, Dept. FW-30
55 West 44th Street, New York 36, N. Y.
In Canada: Paul Collet & Co., Ltd., Montreal

Please send me, without obligation, sample of Flexwood and Case-History Book showing how Flexwood helped solve 17 architectural problems.

NAME_____

ADDRESS_____

CITY AND STATE_____

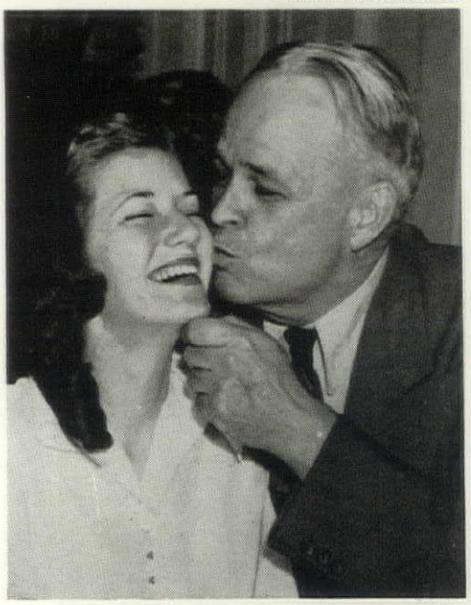
relations committee said Ketchum will supplement rather than take over activities performed at institute headquarters. No direct national advertising will be undertaken by AIA, he said, but it is anticipated that Ketchum may be able to persuade materials manufacturers and other national advertisers to salute the profession, describe its achievements in some of their copy, broadcasts and TV shows.

Root's committeemen: Francis J. McCarthy, San Francisco, vice-chairman Karl Kamrath, Houston; Harold Sleeper, NYC; Frank McNett, Grand Island, Neb.; Herbert Millkey, Atlanta.

Ohio city refuses water for suburban shopping centers

The struggle between city and suburb touched Elyria, Ohio. The city council refused to sell water to two multimillion dollar shopping centers going up in nearby Sheffield township. Reason: the council feared the competition would steal trade from Elyria stores. Moreover, it noted the shopping centers would pay Elyria no taxes.

International News Photo



Winner loses, all but kiss

When Mrs. Shirley Howdeshell Malone, 17, Muskogee, Okla. high school senior and bride of three weeks, was adjudged winner over 17,000 other contestants in NAREB's essay-writing contest, she got a free trip to a gala reception in Washington.

But as Shirley read her essay on "What the Bill of Rights Means to Me" before NAREB's annual banquet, somebody thought it sounded familiar. Checking, NAREB soon discovered nearly nine-tenths of it was cribbed from a magazine article by Dean Russell in 1948 and subsequently reprinted by the Foundation of Economic Education. "Highly embarrassed," NAREB canceled what was left of Shirley's reception: a visit with Vice-President Nixon, a broadcast for the Voice of America. Still in Shirley's corner was the Oklahoma Congressional delegation. Sen. Robert Kerr, bestowing a kiss on the losing winner (above), pointed out the contest rules did not require original material.

New NAREB president warns time grows short for private industry to clear slums

In the ballroom of Washington's Statler Hotel, Charles B. Shattuck of Los Angeles last month took office as NAREB president, threw out a sharp challenge to fellow realtors in his inaugural talk: "Either we come up quickly with worth while programs for building an even better America and make those programs effective for all the people, or we may never again have the opportunity or be able to justify keeping the federal government out of our individual private affairs." Shattuck urged every local realtor board to make elimination of substandard housing conditions its No. 1 project for 1953. (At their Chicago convention, homebuilders had already pledged a "crusade" for enforcement of local housing laws with the same aim.)

Rehabilitation council. To back up his words, Shattuck announced formation of a Build America Better Council headed by former NAHB president Fritz Burns. Council objectives: more speed for the rehabilitation drive; enlisting widespread civic support for aggressive enforcement of ordinances that outlaw sub-standard housing conditions; planning means for promoting privately financed neighborhood conservation, reclamation and redevelopment; recommending local, state and federal tax assistance to encourage this work; solving traffic and parking problems that often worsen blight.

NAREB also urged making tenants subject to fines when they are responsible for housing and sanitary offenses. Moving in that direction, the District of Columbia adopted regulations effective next month giving health inspectors greater right of entry powers. Hereafter, when a tenement owner claims that a tenant controls a portion of his property, inspectors can hold the tenant in violation of the regulation if he refuses permission for them to see it.

Chicago housing court. Other rehabilitation developments:

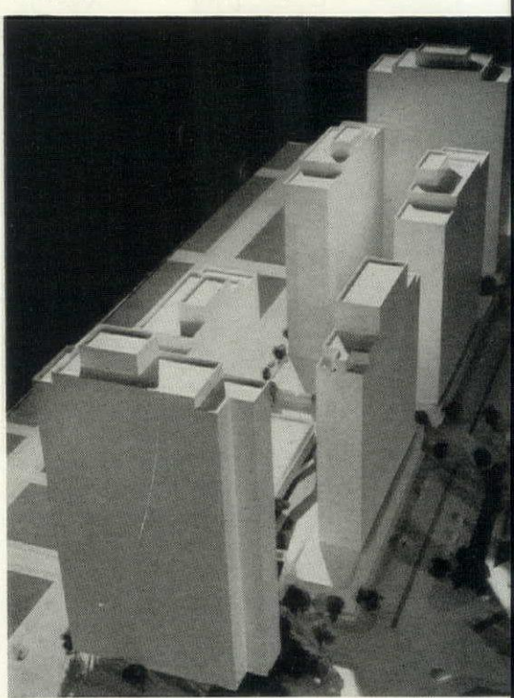
- Chicago opened an emergency building and neighborhood conservation court to help check deterioration by speeding consideration of serious fire, health and building law infractions. The city's regular building and housing court, in operation since 1906, was clogged with thousands of lesser violations. The city awarded contracts for demolition of 21 decrepit buildings, would sue the owners for the costs if they failed to reimburse the city.
- Miami, the first city in the US to establish a slum clearance department (AF, Oct. '52, News), began operations on a budget so small ($29,000 a year) that Director F. A. Kelly and five aides were still chiefly building files and marking time. Kelly, 52, a retired New York policeman, came to the $7,500 post from city's building division.

Redevelopment plans aired in Boston, Philadelphia

Plans to build new life into two of the US's oldest big cities were divulged this month.

Boston started toward redeveloping 28 acres of surplus Boston & Albany railroad yards into a Rockefeller Center–type commercial complex in the middle of the crowded city. Roger L. Stevens, one of the trio that bought the Empire State Building in 1951, signed an agreement to buy the property for $41½ million. His preliminary plans envisaged a hotel, two skyscraper offices, a convention hall, theater, underground garage, at least one store building and possibly a physicians' building. Estimated cost: $73 million. Bostonians figured it could become the biggest thing there since Paul Revere's ride.

Philadelphia was shown an "adaptation" of its planning commission's Penn Center redevelopment plan for the Broad St. Station–Chinese Wall area (AF, June '52), now being torn down. The scheme (see cut) was prepared for the Pennsylvania Railroad

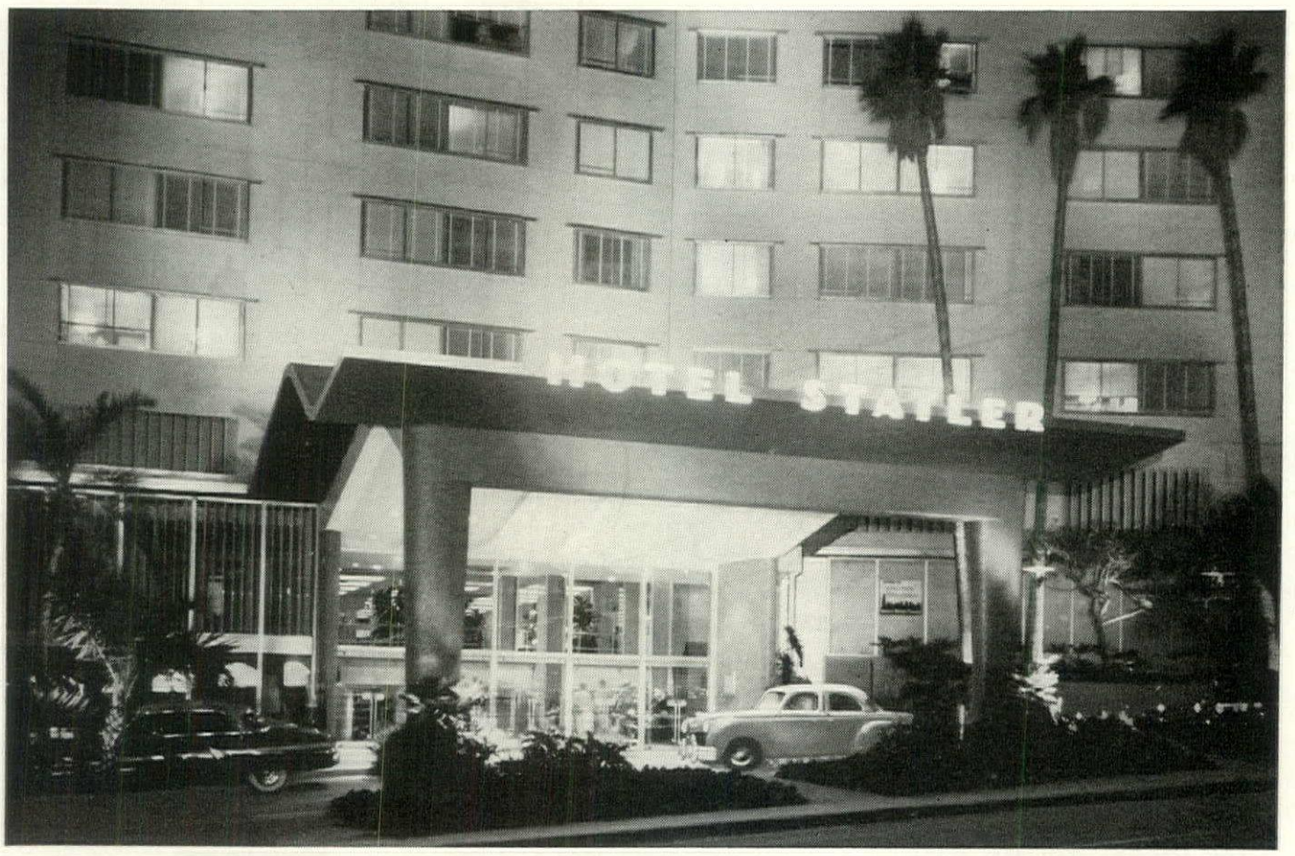


PENN CENTER layout (rough model) recommended by Robert Dowling: five office buildings and a 900-room hotel around a 1,000′ esplanade; underneath all a vast "suburban shopping center in mid-city" served by 1,500-car garage (extreme rear). Foreground building on stilts would face City Hall, start at third floor to allow sweeping esplanade view. Hotel would be the next building to right.

air conditioning

helps forge the newest link in the Statler chain

The new 25 million dollar Los Angeles Statler Center is the eighth link in the famous hotel chain. Completely air conditioned by Carrier, this first West Coast Statler is more than a hotel. In addition to its 1275 guest rooms, Statler Center includes 70,000 sq. ft. of shops and a 13-story office wing with 150,000 sq. ft. of rentable space. Why the office building? First, Los Angeles needed office space. Second, the Boston Statler had demonstrated that such space could provide very welcome extra revenue . . . an anchor to windward. Air conditioning this anchor on Figueroa Street is a Carrier Conduit Weathermaster* System. Outside air for ventilation is cleaned and filtered, humidified or dehumidified in a central apparatus. This primary air and chilled water from a central refrigeration plant are sent through small diameter air conduits and water pipes concealed within furred-in columns to Weathermaster units beneath the windows in each room.



Secondary room air, drawn over a water coil by induction, is mixed with this primary air at the room unit. Room temperature is controlled by each tenant with just the turn of a knob. Thus, each room has its own individual air conditioning, a perfect balance of temperature, humidity and circulation that is uniquely Carrier's. The Carrier Conduit Weathermaster System was developed especially for multi-room office buildings, hospitals, apartments and hotels—where many variables affect the air conditioning load. Other Carrier Systems have been designed for department stores, shopping centers and many other businesses. A letter will put at your service the experience gained in 50 years of dedication to air conditioning. Carrier Corporation, Syracuse, N. Y.

Carrier

first name in air conditioning

Architect and Engineers: Holabird & Root and Burgee. Associate Architect: William B. Tabler. General Contractor: Robert E. McKee, Inc. Mechanical Contractor: Mehring and Hansen. *Reg. U. S. Pat. Off.

by Robert W. Dowling, president of City Investing Co., New York. The Philadelphia *Bulletin* said it "understood" the commission approved Dowling's proposals. Hedged Director Edmund N. Bacon: "No comment."

Pennsy President Walter S. Franklin called Dowling's plan "very attractive" but said there was "no deal" with anyone yet. Dowling, John Galbreath of Columbus, Albert Greenfield of Philadelphia and Equitable Life appeared still in the running as prospective bidders for the property or construction rights. There was some honest doubting whether the city should permit skyscrapers on the site. Scowled the *Inquirer:* "We should not swap one Chinese Wall for another."

Baltimore slum plan told in documentary movie

As the Baltimore Plan for slum rehabilitation became a rallying point for private industry's fight on urban blight, a documentary movie was an obvious answer to the need for explaining its complexities to people in other cities. Two years ago, Baltimore businessmen and the University of Chicago each put up $15,000, and *Encyclopedia Britannica's* film division began shooting.

The resulting 20 min. sound film was premiered this month in Baltimore before an audience of 1,000 who paid $1 apiece which was contributed to the "Fight Blight" fund. The city's reaction was one of restrained enthusiasm. Said the *Evening Sun:* "As the film is shown to ever widening audiences the same old debate is certain to arise: how good is the Baltimore Plan in actual practice? The film does not provide the answer; it is too early to measure the permanent effects of the 27-block cleanup. . . . But the Baltimore Plan, for those who view the film without prejudice, is not presented as a final answer to the slum problem. The plan is not a plan but an approach, and one that has constantly changed to meet new needs. The film shows innovations that six years of experimentation have brought forth, from establishment of a housing court and a special squad of police sanitarians to organization of a businessmen's group [Fight Blight Fund] to help finance repairs by impoverished home owners who cannot afford the plumbing and carpentry which housing law enforcement necessitates."

Final answer or not, the movie showed immediate signs of becoming a hit. By the time it had been screened on TV in Baltimore and New York a week later, President V.P. Arnspiger of *Encyclopedia Britannica* Films reported he had requests for it from as far off as Halifax. The film sells for $85 ($100 after April 1) or can be rented for $4.50 for three days.

HHFA approves New York redevelopment where site costs $35,536 per family unit

New York's Mayor Impellitteri, fighting to keep a 10¢ fare for a 17¢ subway ride, vainly begged Albany this month for more state funds to ease the city's annual financial crisis so he could avoid raising taxes. In Washington, Construction Coordinator Robert Moses had more success at money-raising. Five days before the Republicans took office, Moses got a $5.2 million HHFA slum clearance and redevelopment grant for his "predominantly residential" coliseum and housing project in which the housing will cost about $6 million, a convention hall $20 million.

As slum clearance the project was fantastically expensive. Figures confirmed by HHFA show it would cost an average of $36,536 to clear each of 243 families from the site excluding 362 hotel and rooming house occupants. US taxpayers would foot the bill for $24,356 per family. City taxpayers would pay the other $12,180, and also make up a net loss of another $82,000 a year in taxes if the coliseum obtains the exemption normally accorded the Moses agency that will build it.

Contrasts in expenses. For another project approved at the same time (Morningside-Manhattanville), the city obtained a $3,026,935 grant under Title I. Average total public cost for moving each family from the site, excluding 382 persons in single-occupancy accommodations, was only $3,777. Comparable figures for another four typical projects, based on HHFA data:

Corlears Hook, N.Y.	$6,270
North Harlem, N.Y.	$5,449
Lake Meadows, Chicago	$4,950
West Side industrial, Chicago	$6,506

The fabulous cost of the coliseum project, cried Architect Robert C. Weinberg of New York, was not the only flaw. He charged the plan did not meet the federal requirement of conforming with a city master plan. Said Weinberg: "If New York through Moses is going to get away with obtaining federal Title I grants without providing an over-all plan for large scale redevelopment, which is the basic purpose of Title I, it would be setting an unfortunate precedent."



Constructors group notes drop in jurisdictional strikes

The National Constructors Assn., whose 20 members account for $2 billion a year in oil, steel and chemical construction, reported at their annual meeting in New York last month that the problem of jurisdictional strikes has shrunk into insignificance. Re-elected President John J. O'Donnell (shown 3rd from l presiding over an executive committee meeting) said association members lost 200,000 man-hours in judisdictional diputes in the last six months of 1951. Prejob conferences with union leaders cut this to 100,000 in the first six months of '52. After the AFL banned picketing in jurisdictional disputes, NCA stopped compiling statistics on hours lost because they were "negligible."



Past NCA President J. F. Pritchard (l), head of his own Kansas City firm, chats with J. H. Sharpe of Cleveland's Arthur G. McKee & Co.

Photos: Richard Meek



Heart of NCA's work is anticipating and preventing labor trouble by informal exchange of information on working conditions, contracts, other problems in areas across the country. The association negotiates nationally and regionally for its members, but does not sign contracts with labor. Swapping data are (l to r): Executive Vice-President W. R. Wood of Girdler Corp., Louisville; Vice-President W. N. Thompson of H. K. Ferguson; Vice-President C. D. Haxby of The Rust Engineering Co., Pittsburgh; Vice-President George Schobinger of Day & Zimmerman, Philadelphia.



make it a

One-Piece Pipeline

with WALSEAL®

. . . and you can *see* that it's made right. When you make a WALSEAL joint the fillet of silver brazing alloy that appears at the face of the fitting is your assurance of full penetration and a permanently leak-proof joint that's vibration proof and corrosion-resistant . . . won't creep or pull apart under any conditions that the pipe itself can withstand.

Walseal is a registered trade-mark which identifies valves, flanges and fittings manufactured by the Walworth Company. Walseal products have *factory-inserted* rings of silver brazing alloy in threadless ports. Joints made with Walseal products are silver brazed and actually make the system a "one-piece pipeline."

Your copy of Circular 115 giving details on Walseal valves and fittings will be sent on request . . . send for it or see your nearby Walworth distributor.

SEE OUR CATALOG IN SWEET'S

Make it a "one-piece pipeline" with Walseal



WALWORTH

valves and fittings

60 EAST 42nd STREET NEW YORK 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

Joint jurisdictional board change voted by AFL meeting in shadow of union shooting

Reorganization of the National Joint Board for Jurisdictional Disputes to promote greater impartiality was approved by the AFL Building Trades Council's quarterly meeting in Miami Beach Jan. 28-31.

The board now consists of impartial Chairman John T. Dunlop and four members each from labor and industry. Four alternates from each side would be appointed to replace regular members on cases involving their own interests.

Approval expected. The proposal now goes to the 19 construction trades internationals and the four contractor groups represented on the board, the AGC and the specialty, mechanical and tile contractors. Final adoption is expected next month.

John T. Bills



CALDWELL



MITCHELL

The council has been "very pleased" with the results of its ban on picketing in jurisdictional disputes last July, declared President Richard J. Gray. This has even helped reduce the number of industry-labor differences before the joint board, said Secretary Joseph D. Keenan.

Attempted assassination. But only five days after the building council had adjourned, while most members remained for the national AFL executive council meeting, a Miami carpenters-laborers dispute led to a gangland-style attempt to shoot business agent George L. Mitchell, 46, of the local carpenters district council.

No charges have been filed, but police questioned Max Caldwell, alias Max Pollock, former Capone mob racketeer who moved to Miami several years ago after the Chicago retail clerks' union he had been running turned up $900,000 short in its accounts. In Miami, Caldwell became agent for AFL laborers local 1040.

Fisticuffs and firearms. On Jan. 19, Caldwell's efforts to force all nonunion building workers into his laborers local took him to a Hialeah housing project, where he engaged in an argument with superintendent Royce V. Mock, a member of the AFL carpenters union. Upshot: Mock was struck in the left eye so severely he may lose its sight. Caldwell and his assistant, Joseph Severino, were charged with assault and battery.

Mitchell convened Miami's four carpenters locals in special session. They asked the Dade County Building Trades Council and Miami Central Labor Union to expel the laborers local until it purged itself of Caldwell and his aides. The council suspended the local on Jan. 27, the central union on Feb. 3. Two nights later, two shotgun blasts were fired at Mitchell as he stepped from his auto into the porte-cochere of his home in Hialeah. Mitchell was unhit, fired two shots of his own from a .25-caliber pistol with unknown results at an automobile that sped from the scene.

Two more senators assail waste in military building

Last Aug. 5-Sept. 15, Sens. Russell B. Long (D, La) and Wayne Morse (Ind, Ore.) made a 30,000-mile tour of 60 military bases in the US and overseas to see what the nation was getting for the billions it was pouring into military construction.

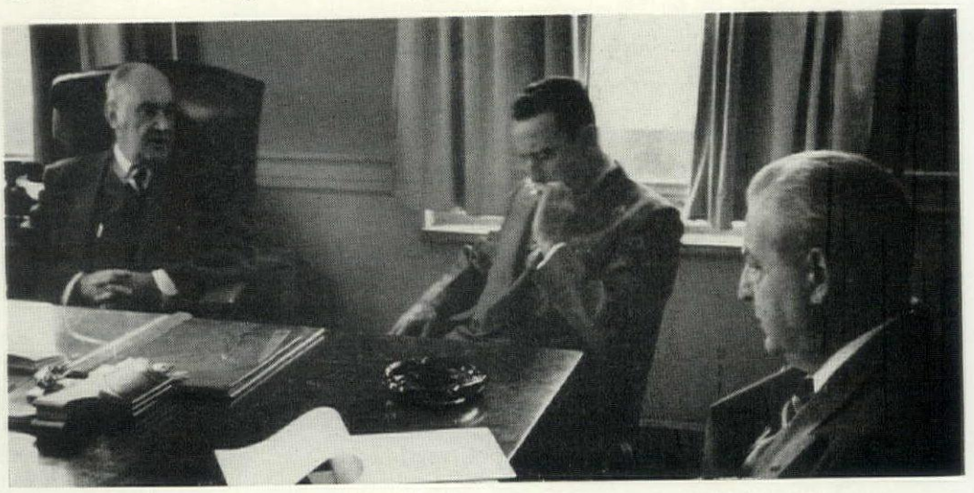
Their subcommittee report, released in mid-February, threw a new barrage of rocks at "high level planning" and waste in construction arising from bad organization, confusion and over-designing. But the building industry could take comfort from the fact that the two senators had not a harsh word for the private contractors carrying out armed forces' plans.

Global net of cities. Cried the subcommitteemen: "In some instances our nation has spent hundreds of millions of dollars developing defense bases where our allies will have every right to tell us to leave within a few years. . . . Taxpayers are un-

CONSTRUCTION STRIKES IN '52

Eleven of last year's 34 work stoppages of 10,000 or more workers affected construction (more than occurred in any other industry) and caused 6,682,500 man-days of idleness. The national loss from all labor stoppages totaled 55 million man-days highest since 1946, the Labor Department reported. The 11 major construction halts alone constituted 12.1% of the national loss.

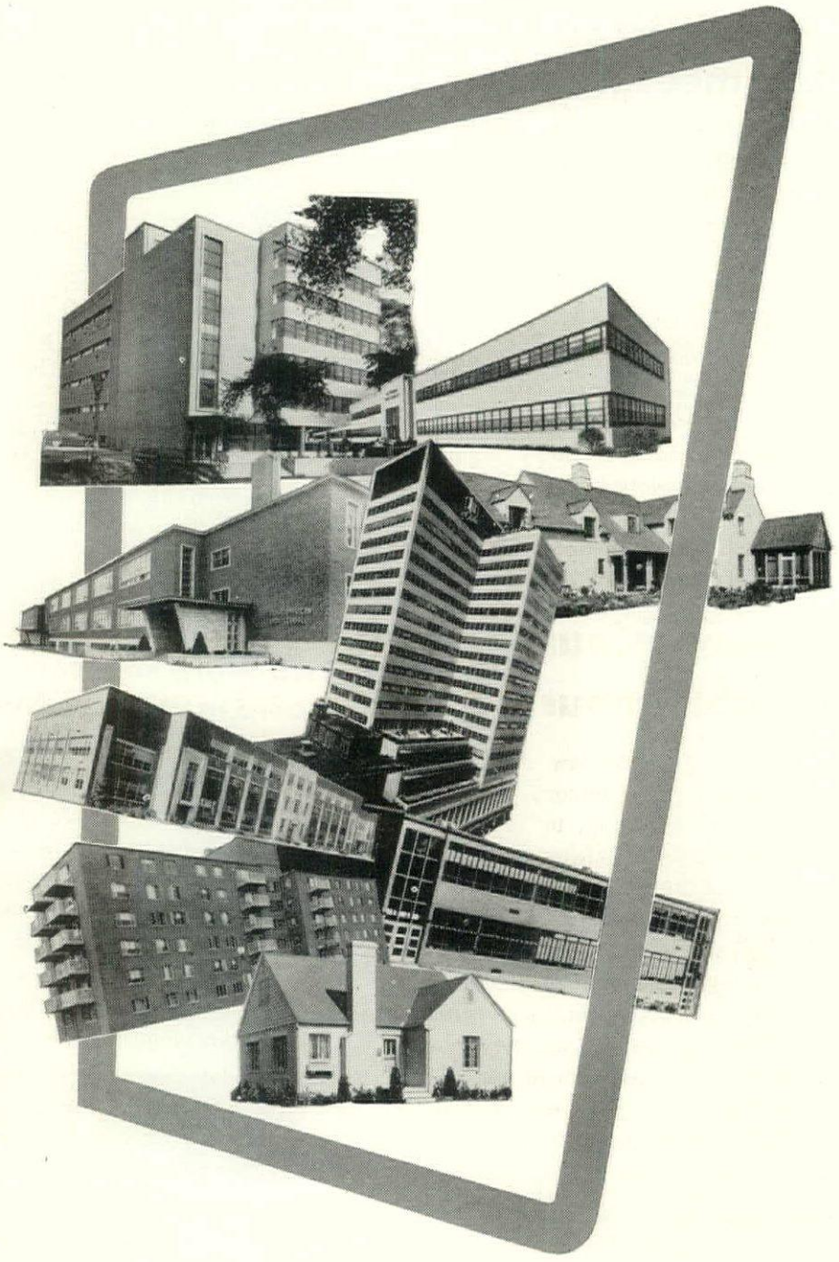
Five of the largest construction strikes were at Atomic Energy Commission projects. Three were among the year's six strikes that cost more than 1,000,000 man-days: a 60-day strike by 35,000 San Francisco Bay area building workers; a 32-day stoppage by 45,000 in northern and central California, and a 23-day strike by 70,000 in the Detroit area. The long steel strike cost 23.8 million man-days, or more than the total of 22.9 million from '51 stoppages.



New York employers celebrate record in labor peace

Fifty years ago amid chaotic labor conditions, New York City contractors formed a Building Trades Employers' Assn. They persuaded the AFL to set a unique joint mediation and arbitration program giving employers the final say in jurisdictional disputes. Last month, celebrating its half-century anniversary with a $28,500 dinner for 1,184 members and guests at the Waldorf-Astoria, BTEA could be well satisfied with the result: an unparalleled record for keeping jurisdictional strikes to a minimum.

The heart of the well-oiled machinery is its mediation board (shown in session above). The board consists of Chairman Peter Eller (l) of BTEA's board of governors, Howard McSpedon (c), head of New York's Building Trades Council, BTEA Secretary Arthur Riehl and local union representatives involved. The mediators get cases that McSpedon cannot settle himself. If the mediators fail to agree, the dispute goes to BTEA's 14-man executive committee, with Eller presiding, for final determination. Its decisions, now numbering some 300, are so respected it even gets cases from nonmembers. But usually, interunion conflicts do not get to arbitration. Last month, the BTEA board of arbitration settled its first case in two years. It involved the nation's first jurisdictional row over prestressed concrete. BTEA awarded dock builders, not ironworkers, the right to place prestressed concrete stringers to support the deck of New York's Pier 57. Not a day's work was lost over the dispute.



FINER FENESTRATION

. . . by Crittall

Whether for modest home or towering apartment, school, office or factory, Crittall Steel Windows provide lifetime durability, require minimum maintenance, and combine the beauty and function of modern design.

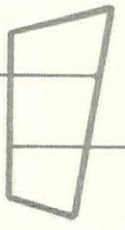
Crittall Steel Windows are easy to work into almost any building design, and are available in a wide variety of styles and sizes. Further, Crittall ingenuity often finds means to utilize the economy of standard elements in fabricating windows of highly specialized design.

Crittall's expert technical sales representation is available to conscientiously serve the architect, the contractor and the owner.

●

You will find the 1953 Crittall catalog (as it appears in Sweet's Architectural File) a valuable time-saving reference manual of information useful to the designer in the developing of plans and specifications. You are invited to write to Crittall for additional copies for your staff.

Crittall Inc.



WAUKESHA, WISCONSIN

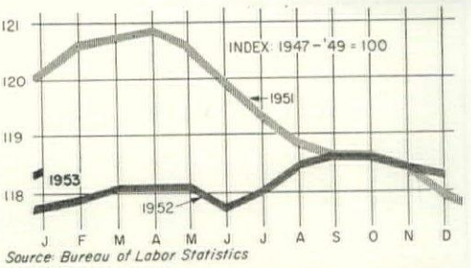
suspectingly being led into a program that would require the virtual building of small modern American cities, running into an investment of over $100 million each, at many points throughout the world. . . . We cannot understand a program which has 100 or even 200 groups of men in units of 2,000 to 5,000 sitting idly in the muck and mire of Europe, Africa, Asia and the Arctic Circle waiting for a war which we hope to avoid."

They were sharply critical of construction organization in the Defense Dept: "It is difficult to determine in some commands and base headquarters who is responsible for construction work and who is running the job—the Air Force, Corps of Engineers, architect-engineer, or a foreign government. It is assumed that the construction contractor might also be thoroughly confused. . . ."

Roads too wide. The senators assailed the Air Force for paving its primary roads at Limestone, Me. 48′ wide, secondary roads 24′ wide. That was a sample, they declared, of criteria "considerably above requirements." They criticized British "restrictive labor practices . . . supported by government sanctions," noting that an American asphalt-laying crew at one base put down "almost five times as much" in a day's work as a British crew.

Family housing, they reported, was "well out of hand" in "all foreign countries," a situation they said called for new rules covering how much, what type and where it will be provided.

The Pentagon reaction: no comment.



MATERIALS PRICES rose from 118.3 in December to 118.4 in January on BLS' index. Responsible for the climb were price gains for lumber, wood products, cement and some concrete products.

Supreme Court to review anti-Red oath in public housing; bonds hit money trouble

Six months after the law went on the books, public housing authorities across the nation were beginning to enforce the Gwinn amendment requiring a loyalty oath from tenants. Almost immediately, they ran into legal trouble.

The amendment, included in an appropriations bill signed into law July 3 by former President Truman, made membership in any of the 200 organizations on the US Attorney General's subversive list, or refusal to swear to nonmembership, grounds for evicting tenants from federally aided public housing.

High court intervenes. In New York, the International Workers' Order, Inc., fraternal insurance firm which was on the list, filed suit charging the oath violated tenants' constitutional rights. A federal judge rejected the suit. But an appeal to Supreme Court Justice Robert H. Jackson brought an order forbidding the New York Housing Authority from enforcing the oath until the Supreme Court rules on the case. Jackson's order bound only New York. Nearly everywhere else, public housing authorities could continue to enforce the oath.

In Newark, N.J., the American Civil Liberties Union brought a similar test suit challenging constitutionality of the oath, won a temporary order from a state judge restraining the Newark Housing Authority from evicting nonsigning tenants. Of the Newark Authority's 3,019 family heads required to take the oath, only 11 (including two officials of the New Jersey Communist Party) had refused to sign, received eviction notices when the suit was filed. That was about 0.3%. Most observers expected the percentage of nonsigners to run under 1% everywhere.

Tight money headaches. The Public Housing Administration's fifth offering of permanent local authority bonds Jan. 21 bumped into higher interest rates. In an effort to pare the interest, PHA cut the term from 40 to 30 years, offered only 70% of their borrowing needs to private investors. Despite such efforts, the $127 million in income tax–exempt bonds brought an average 2.396% interest, only a slight drop from last September's average rate of 2.544%. For the other 30%, public housers tapped the US Treasury, paid 2.5%. The Treasury cannot borrow for 30 years at 2.5% on this winter's money market. If the Treasury deal was permanent financing, it was a new, substantial subsidy.

Marble bids to substitute for lead as atom ray shield

Protecting hospital technicians from the lethal cumulative effect of X-rays, shielding scientists in atomic laboratories against deadly gamma rays generally requires a thick and expensive shield of lead. This month, the Marble Institute of America announced that tests by Oak Ridge physicists show marble can be used just as well.

Besides conserving scarce lead for other uses, marble protection is cheaper, the institute asserted. When specifications for the walls of two rooms in the University Medical School and Teaching Hospital under construction in Jackson, Miss. were changed from lead to 4″ of marble, it saved $2,700.

After a test at the institute's request, Dr. Marcel Brucer of the medical division of the Oak Ridge Institute of Nuclear Studies reported that cesium radiation similar to the radiation from a 1-million-volt X-ray machine was reduced to 1/10th its original value after passing through four inches of marble . . . "therefore 4¼″ of marble is just as good as ¾″ of lead for protection from a rather high energy radiation."

Geoffrey I. Gleason, Oak Ridge manager of Abbott Laboratories reported using 8″ marble walls that gave about the same gamma ray protection as 2″ of lead.

Marble weighs about 170 lbs. per cu. ft., according to the institute. So a 4¼″ shield would weigh about 73½ lbs. per sq. ft. or just about 50% more than a ¾″ lead shield of 48 lbs. per sq. ft. But wall uses would save furring-plastering weight and costs.

Survey finds capacity for structurals high – on paper

A survey by NPA and DPA shed a little more light this month on the controversy over whether producers are neglecting construction's need for structural shapes (AF, Aug. '52).

On paper the industry's maximum annual heavy structural and piling capacity next year (when the rapid amortization defense expansion program is completed) will be 9,560,000 tons. This will be more than double its actual net shipments of 4,591,000 tons in 1950, a little less than double peak postwar shipments of 5,321,000 tons in 1951. On wide flange beams and bearing piles, two of the scarcest structural items during the Korea steel pinch, 1950 shipments were 2,000,000 tons, 1954 capacity should be 2,645,000 tons.

Defense officials noted, however, that: 1) facilities to produce structurals also can be used for other products, and 2) during emergencies the government may order their output diverted to *nonconstruction* uses. Thus structural *capacity* is only theoretical, gave no assurance to either construction or the steel industry that *production* would even come close to it. The situation, commented one defense construction official, only accentuates the pressure for construction to adopt substitute materials and methods. Said he: "This ought to be quite disconcerting to structural fabricators, who might have more run for their money if the capacity for structurals was somewhat greater than appears at present."

WESTINGHOUSE PASSENGER-OPERATED SELECTOMATIC ELEVATORS



WESTINGHOUSE
WEIGHING DEVICE

Here is a photograph showing the location of the unseen scale that weighs passengers, trips a switch and starts cars . . . when 80% of capacity is reached.

Unique Weighing Device Speeds Passenger Service

Westinghouse Passenger-Operated Selectomatic elevators know enough to say "when". . . at 80% of capacity. An unseen scale weighs the passengers, trips a switch and starts the car.

This does away with overcrowding, improves service, saves time. It's one of the many features developed over the years that make this the most advanced elevator system available today... the only system that uses its head to solve any daily traffic problem.

In the morning . . . at coffee time . . . at noon . . . the evening rush . . . any time . . . Westinghouse Passenger-Operated Selectomatic records the calls it hears, and matches the tone of the elevator service to the tone of the tenants' demand... instantly—*without attendants*. It's popular with tenants . . . and offers building management substantial dollar savings.

Whether you're interested in modernizing or planning a new building, get the complete Westinghouse Passenger-Operated story. Find out why it's fast becoming the most talked about elevator system today.

Westinghouse Elevators

YOU CAN BE SURE... IF IT'S Westinghouse

J—98661

PEOPLE: Contest develops for AIA president as Ditchy, Wischmeyer are nominated; Ralph Tudor gets Interior post

AIA's Seattle convention June 16-19 may see a fight over a successor to President **Glenn Stanton**. By rarely upset custom First Vice-President **Kenneth E. Wischmeyer** of St. Louis is in line for the job. But last month three New York, Kentucky and Michigan chapters completed formal nomination of **Clair W. Ditchy,** FAIA, of Detroit. He became an AIA officer about 1938, has been secretary (mostly an honorary position) since 1944. But both Ditchy and Wischmeyer are regarded as conservatives. Neither would be likely to satisfy the groups frustrated in the 1949 AIA presidential contest between New York's Ralph Walker (elected) and Dean William W. Wurster of the University of California's architecture school. Many an architect expected their opponents to make the most of any division among the conservatives. The outlook was for still more nominations before election time.

Appointed this month as Undersecretary of the Interior, second highest position in the department: construction expert **Ralph A. Tudor,** 50, chief engineer for the San Francisco–Oakland Bay Bridge during its construction period, and planning and construction supervisor for all California state buildings at the 1937 Golden Gate International Exposition. West Pointer Tudor served in the Army Engineer Corps 1923-29, was recalled to active duty in World War II and directed completion of Bonneville Dam. In 1945-47 he was a vice president of Morrison-Knudsen International, later opened his own consulting office in San Francisco.

Associated Press



TUDOR

Other new and old faces in the Washington transition: **Lloyd A. Mashburn,** 55, California State Labor Commissioner, member of the AFL Wood, Wire and Metal Lathers Union and former Los Angeles Building and Construction Trades Council secretary-treasurer, appointed as Undersecretary of Labor; **Arthur S. Flemming,** serving as Acting Defense Mobilizer (ODM boss) succeeding **Henry H. Fowler,** resigned; **Stephen W. Burns,** advanced to acting assistant administrator in charge of NPA's facilities and construction bureau succeeding **Rufe B. Newman,** who resigned to take charge of the Commerce Department office in his home city of Jacksonville, Fla; **Henry L. Badoux,** advanced from deputy director to head the NPA construction controls division in place of Burns; deputy director **William G. Barr,** 33, named temporary head (and possibly liquidator) of the Office of Rent Stabilization succeeding **James McI. Henderson,** resigned Truman appointee.

Landscape architecture and regional planning departments will be merged to cut expenses and major emphasis will be restored to international architecture at Harvard's school of design when **José Luis Sert** assumes direction as dean next fall (AF, Jan. '52). Seven of 15 staff members are expected to leave in the reshuffle, although some will be replaced by new appointees. Planner **Coleman Woodbury** will transfer to the university's Littauer graduate school of public administration. Planning Professor **William L. C. Wheaton** is reported joining another large eastern school. Stories of other departures and appointments circulated widely but Sert said he had not yet made any appointments or plans for his administration.

Structural Clay Products Institute appointed **Henry E. Bollman,** 37, to a newly created post of executive director in its Washington headquarters. Bollman received an architectural engineering degree at Iowa State College in 1940, joined the institute's Iowa regional office in 1948, was appointed its Rocky Mountain region director in 1950. SCP Research Foundation Director **Robert B. Taylor** and Mason Contractors Assn. President **William F. Nelson** announced plans for joint research on lowering the cost of masonry buildings.

Urban Land Institute trustees this month elected **John McC. Mowbray** of Baltimore as president for 1953 succeeding **Philip W. Kniskern** of Philadelphia. Mowbray is president of the Roland Park Co., builder of the Roland Park, Guilford and Homeland communities in Baltimore, where he also is president of the Fight Blight Fund and formerly was real estate board president. Former NAHB and NAREB President **Robert P. Gerholz** and **Waverly Taylor,** Washington, D. C. builder, were elected first and second vice presidents succeeding **Warren L. Morris,** of Cleveland and **F. Poche Waguespack,** of New Orleans. The institute hired **Robert B. Garrabrant** from the US Chamber of Commerce construction and civic development department in Washington as secretary of its industrial council.



MOWBRAY



VIRGINIA'S AIA chapter at its annual meeting last month voted funds for field trips by architectural students to offices and projects of leading architects. Particularly pleased was Thomas FitzPatrick, new head of the university's school of architecture, shown with Charleston's C. E. (Cy) Silling (l) AIA Middle Atlantic district director and Richmond's Marcellus Wright, Jr. (r) chapter nominee to succeed him. The meeting derived grim satisfaction from a report that not a single request has been made for stock school plans the state started preparing two years ago against architects' advice, a project that has cost the state $40,000 so far.

Greatest complaint at the meeting was against state plans for assessing its $25 professional revenue license tax against architects who are only employees.

Marble veneer received **Frank Lloyd Wright's** tongue-in-cheek blessing at an International Cut Stone Contractors' and Quarrymen's Assn. meeting in Houston. Said Wright: "Plywood had released the beauties of wood . . . is supplanting lumber. I use it constantly when I can't get lumber, and I can't get it very much. . . . So what you stone men can do is to slice stone into slabs. Not necessarily 4′ x 8′, but thin slabs. . . . Go into the country and develop quarries of finer, more precious and beautiful material now that you are luxury men and selling a luxury material. . . . Why, you can put a little slab on the face of 2 x 4's and get a marble building. Good enough for Americans, in this stage of their development."

Released in December by the Frank Lloyd Wright Foundation at Taliesin: a series of long-playing phonograph records of FLLW talks to and with the Taliesin Fellowship and some of his addresses elsewhere.

NAMED: **Prof. Paul Zucker** of Cooper Union as recipient of the AIA New York chapter 1953 Brunner scholarship, a $2,400 grant to advance his projected book, *The Square: Its Significance in City Planning*; **Charles A. Blessing,** for the last five years planning director of the Chicago planning commission, as director of the Detroit planning commission; **Louis H. Gerding,** 50, Ottawa, Ill. institutional buildings specialist, as Illinois state supervising architect, and **Edwin A. Rosen-**

continued on p. 54

All three know...



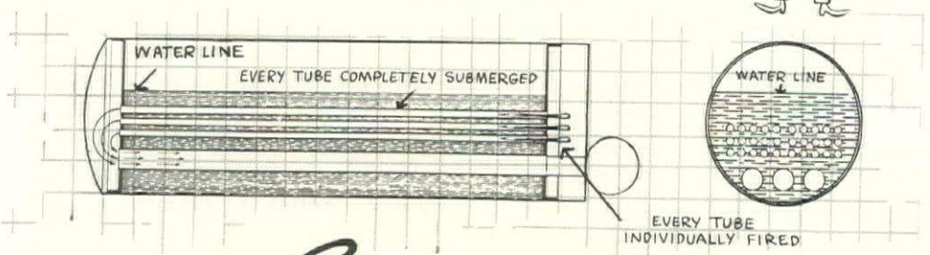
THAT NO OTHER STEAM BOILER IS LIKE A SELLERS IMMERSION STEAM BOILER!

Anyone familiar or experienced in steam boiler installations knows that a Sellers Immersion Steam Boiler is different because of its *REMARKABLE* and *SIMPLE DESIGN*. Each of the many long tubes are *individually gas fired*—and therefore *uniformly heated*. Furthermore, these tubes are completely submerged and nearer the water level—for 100% water backing and increased heating efficiency.

Many other features of this Sellers design combine to give you years of maximum efficiency at remarkably low operating costs. Twelve sizes available!

SEND FOR BULLETIN 1206 C-A2
Your letterhead will bring you this tell all, dollar saving story on all 12 sizes!





Sellers ENGINEERING CO.

4876 N. CLARK STREET CHICAGO, ILL.

Immersion Automatic Water Heaters • Combustion Units • Industrial Gas Burners
Blast Heaters • Vertical Steam Boilers • Immersion Tank Heaters • Gas Combustion Equipment

stone, 57, of Cambridge, Ill. as state public works and buildings director; **John D. Biggers,** president of Libby-Owens Ford Glass Co., as chairman of the Department of Commerce business advisory council; **J. Gordon Sinclair Adamson,** 49, winner last year of a Massey Foundation silver medal for his design of a North Toronto apartment, as president of the Ontario Association of Architects; Architect **Nathaniel A. Owings,** as a director of Celotex Corp.; **A. Kingsley Ferguson,** assistant to the president, as vice president in charge of industrial engineering for Walter Kidde Constructors, Inc.; **Francis W. Daniels,** designer and chief engineer, as vice president in charge of engineering of H. K. Ferguson Co.

DIED: **James R. Edmunds Jr.,** 62, whose unassuming but effective leadership while AIA president in 1946 gave impetus to a program for opening its membership to all reputable, qualified architects, Feb. 4 of a stroke in Baltimore. Edmunds at various times headed the institute's committee to study atomic blast effects on design, the US Chamber of Commerce's construction advisory council, the Baltimore Housing Authority and Board of Architectural Review His greatest contribution to architecture was in hospital design, including VA structures in Maryland, Greenville, S.C., Talahassee, Fla. and all recent work at Johns Hopkins. His design adhered to no one school but extended from conservative to modern. **Hobart C. Brady,** 50, NAREB president in 1948, former Appraisal Institute vice president, author of *Real Estate Selling Today* and other realty books, Jan. 20 in Wichita, Kan.; **Marie Alexander,** 46, wife of Los Angeles architect—city planner Robert E. Alexander, Jan. 8, when her automobile stalled and was struck by a train; **George Lowe,** 52, executive engineer with NY bridge consultants Hardesty & Hanover and former sales manager for Carnegie Illinois Steel, Jan. 14 in New York; architect **Maury Diggs,** 66, of Oakland, Calif., designer of San Quentin Prison, San José State Teachers College, race tracks, office buildings and theaters, Jan. 18 at St. Helena, Calif.; **Mrs. Charles H. Tompkins,** the "lady engineer" of Washington, D. C., where she founded the Charles H. Tompkins Co. with her husband in 1910 and served until her death as an engineer, inspector and personnel executive, Jan. 28 in Washington; **Cecil I. Cady,** 64, chief electrical engineer for



EDMUNDS

oorhees, Walker, Foley & Smith Jan. 31 Tarrytown, N.Y.; **James Carroll Blair,** , first president of Libbey-Owens-Ford e retired in 1930), Feb. 1 at Toledo.

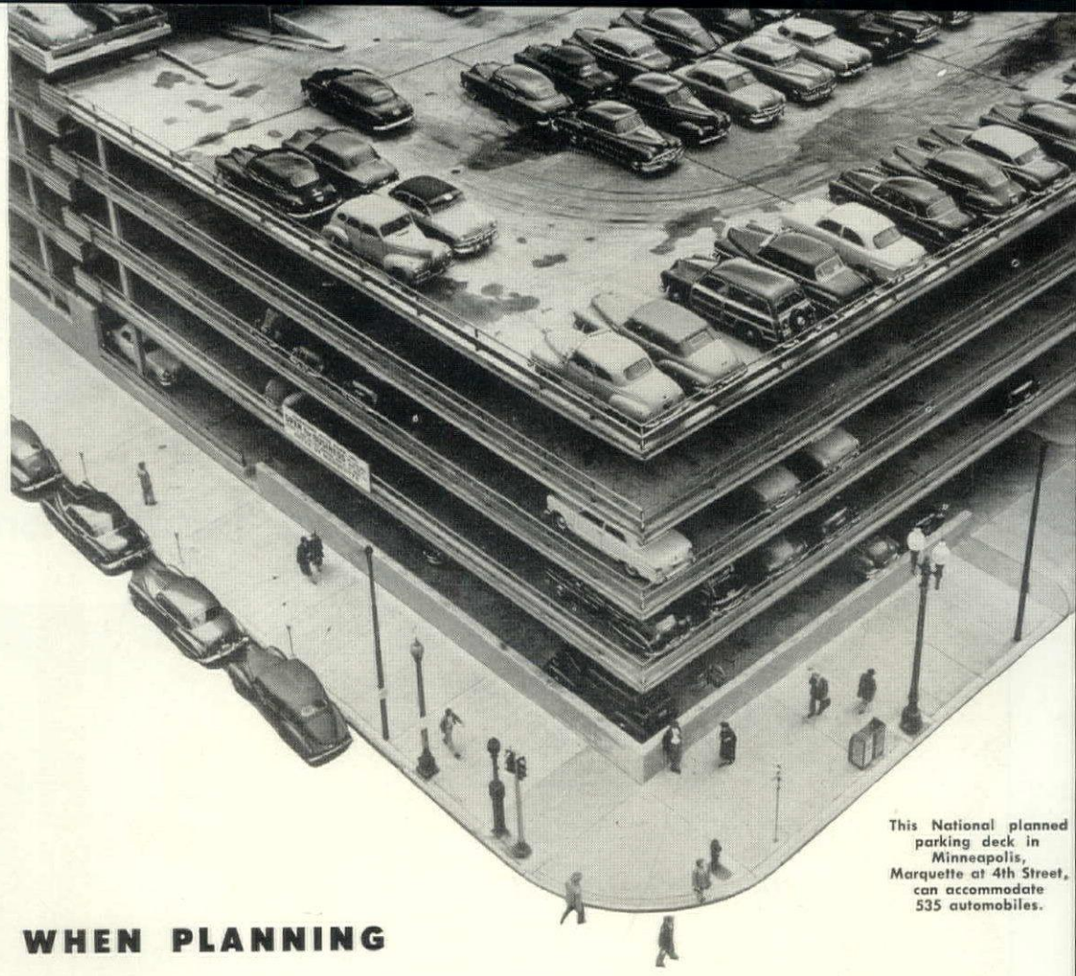
Ohio town fights permit for tax-free gov't. plant

or years, big cities and little towns alike ave fretted over the swelling burden of tax ee land held by the federal government. ast month, the village of Cuyahoga eights, Ohio (pop. 752), challenged the isenhower administration to do something out it. By a 3-3 vote, the village council eclined to grant Alcoa's application for a uilding permit for a $40 million Air Force-nanced plant to house one of its giant new uminum forging presses.

ationalized industry? Explained Vil-ge Solicitor Paul Walter (who has been en. Taft's campaign manager in northern hio for years): "We want to know whether e new administration is going to continue e policy of nationalizing industry. We ant a review of the whole question of hether it is proper for government to use axpayers' money to build a plant from hich private industry will make a profit, nd then load another burden on the tax-ayer by not paying taxes. Alcoa could use e plant commercially while producing for e Air Force. We believe Uncle Sam hould assume a fair share of supporting ommunities through payment of taxes."

Mayor William R. Gerdon, who refused o cast a tie-breaking vote, said he did not ant to see his town "in the same fix as Brook Park Village," a neighboring Cleve-and suburb. Brook Park gets no taxes from General Motors' government-owned tank lant but must provide police and fire pro-ection. If Alcoa builds the Air Force plant, Gerdon wailed, Cuyahoga Heights stood to ose the $33,000 which would be the plant-ite's share of property assessments for an nterceptor sewer. Already, tax-free prop-rty in the village included 27 acres owned y Cleveland, 100 acres occupied by Cleve-and sewage disposal plant and several hun-lred more for a new state-county freeway.

Problem for Ike. Within the week, the problem typified by Cuyahoga Heights anded in President Eisenhower's lap. Lead-rs of the American Municipal Assn., call-ng on the chief executive, protested that "many local communities" across the US "are overrun by armed service installations r defense plants" which cut local revenue at the same time they raise demand for police, fire, health and water services. Eisen-hower told Sherman Adams, his top aide, to see what can be worked out. NAREB said it was going to study the problem, too.



This National planned parking deck in Minneapolis, Marquette at 4th Street, can accommodate 535 automobiles.

WHEN PLANNING

PARKING FACILITIES

CALL NATIONAL GARAGES FIRST

COMPLETE PARKING DEVELOPMENT SERVICE

FEASIBILITY
- Demand Estimates and Site Studies
- Functional Layouts
- Financial and Operational Studies

CONSTRUCTION
- Construction Plans and Specifications
- Construction Supervision

OPERATION
- Management and Operating Service

23 years of experience in planning, management and operating service for the Automobile Parking Industry has made National Garages one of the foremost parking specialists in the nation. Their complete, three-phase program will help you determine the need for additional parking space, the amount of space that can be profitably added in the area, an accurate estimate of income and expense. Then—National will plan the parking deck, supervise its construction, and operate it if you so desire. Get a National report *first* if you are considering an investment in a parking lot or parking deck. Write on your letterhead to George A. Devlin, Planning Division.

NATIONAL GARAGES, INC.

1009 CASS AVENUE • DETROIT 26, MICHIGAN

Another recently completed National project in Minneapolis. Combined, the two parking decks have 1350 stalls on a total of 13 parking floors.



Impartial survey shows

ARCHITECTS PREFER CELOTEX INSULATING SHEATHING 2 TO 1

over the next leading brand

Does far more than ordinary sheathing – yet costs no more, applied!

Now stronger, more rigid than ever!

Celotex 25/32" thick Insulating Sheathing is LAMINATED for extra structural strength, added rigidity, greater bracing power.

Applied, it costs no more—and usually LESS—than ordinary sheathing. Yet it gives you all these extra advantages and economies . . .

1. Insulates and weatherproofs as it builds, all at one cost! No building paper needed.

2. No corner bracing needed to meet F. H. A. requirements, with 4' wide, 25/32" thick Celotex Insulating Sheathing. Has approximately 30% greater bracing strength than ordinary sheathing.

3. Goes up 30% faster. Easier to cut and fit. Reduces waste up to 15%. Shingles can be applied direct, quickly and easily.

4. Double-waterproofed. Inside, by integral treatment that coats every fibre; outside by asphalt coating. Yet has over twice the vapor permeability required by government agencies!

5. It is the only sheathing made of tough, interlocking, long Louisiana cane fibres—and protected by the patented Ferox® Process from dry rot and termites.

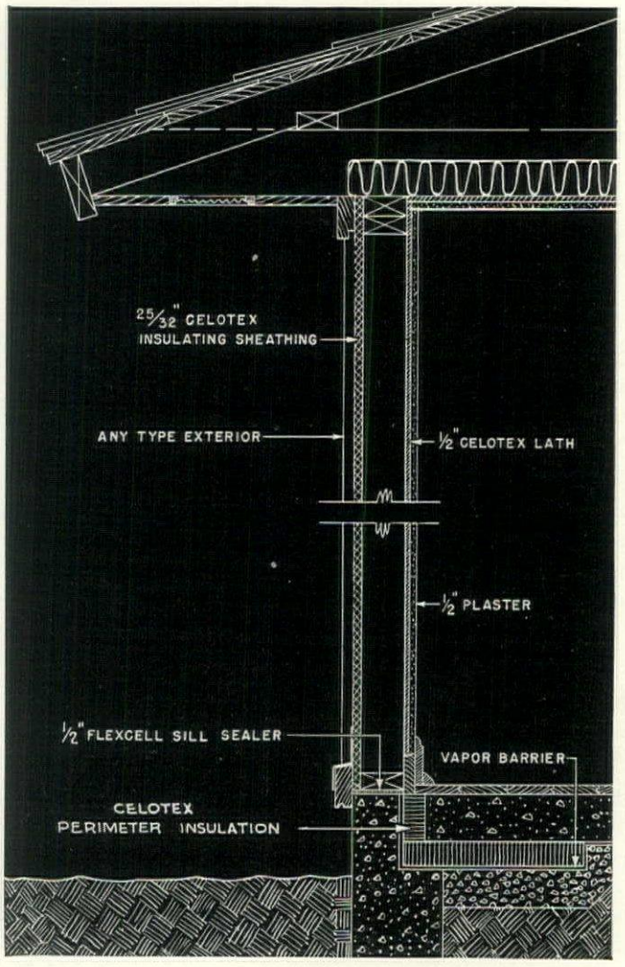
WRITE TODAY for full data on Celotex Double-Waterproofed Insulating Sheathing, and the Celotex Self-Insulating Wall described at right. The Celotex Corporation, Dept. AF-23, 120 S. LaSalle St., Chicago 3, Illinois.

Build Better . . . Specify Genuine

CELOTEX

REG. U. S. PAT OFF

BUILDING PRODUCTS



"U" value of this wall is 0.15 with wood siding and plastered interior

A better, stronger wall at lower cost— THE CELOTEX SELF-INSULATING WALL

Often called "the ideal wall," the Celotex Self-Insulating Wall is built with Celotex Insulating Sheathing on the outside, Celotex Insulating Lath on the inside. Costs less to erect than a conventional frame wall of comparable insulating efficiency.

Exceeds F. H. A. insulation requirements in about 90% of the areas in the country. Has greater structural strength and bracing power. Easier, quicker to build. Any type exterior finish can be speedily and economically applied to it.

THE CELOTEX CORPORATION
120 S. LA SALLE ST., CHICAGO 3, ILLINOIS

where meeting the public is a lifetime job

micarta® PLASTIC SURFACE is the answer!

This beautiful showroom of the United Fuel Gas Company was constructed with practical Westinghouse MICARTA®. On the furniture, walls, and counters, MICARTA plastic surfaces stand up to the rigorous wear of continuous public traffic. They resist the scuffs, burns, and scratches of countless customers. MICARTA can be cleaned with a damp cloth in a matter of seconds. The beauty and utility of MICARTA makes it ideal for applications in hotels, schools, restaurants, offices, hospitals—in fact, wherever the job requires a tough, economical, hard-working surface. An appealing range of MICARTA colors, patterns, and wood grains will fit any type interior or color scheme. For further information on MICARTA consult your nearest U. S. Plywood representative, or fill out the coupon below.



UNITED FUEL GAS COMPANY SHOWROOM, CHARLESTON, WEST VIRGINIA

UNITED STATES PLYWOOD CORPORATION
55 West 44th Street, New York 36, N. Y.
Please send full information on MICARTA and its applications.

NAME .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

AF-2-53

Westinghouse micarta®

distributed by | UNITED STATES PLYWOOD CORPORATION
largest plywood organization in the world
and U.S.-MENGEL PLYWOODS · INC.

J-06468

Cincinnati– CITY WITH **THOROSEALED** HOMES

"Beautiful Homes for Your Very Own"

ROYAL W. JACKSON
2745 W GALBRAITH ROAD
TELEPHONE, JAckson 8707
CINCINNATI 24, OHIO
October 25th,1951

Standard Dry Wall Products
New Eagle
Pennsylvania

Gentlemen:

During the past five years we have built four hundred homes in the greater Cincinnati area. I have to admit, and most builders will, that water is one of our greatest problems. We have had our share of dampness and troublesome leaks as most builders do, until we were at our wits end as to know what to do.

The past winter and spring was about the coldest and dampest ever recorded in the state of Ohio. Having tried just about every waterproofing on the market without the best results, we decided to try Thoroseal.

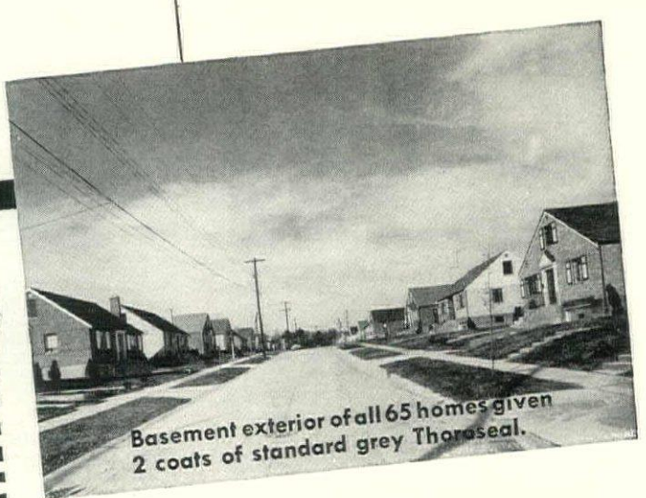
We have built sixty-five homes so far this year. Each of these homes were given a two brush application of Thoroseal. To date we have had but one complaint, which was minor and easily stopped with Water Plug. I am thoroughly convinced and sold on Thoroseal and Water Plug. I believe it is the best waterproofing on the market today. It is superior to anything we have ever used.

Yours very truly,
Grover L. Steinke Supt.

Noted home builder claims Thoroseal and Waterplug best material on the market--

Here's a contractor who won't be annoyed with customer complaints again. To be sure that all his homes are dry, he uses the 40-year-old Thoro System Products, a name top on the list with famous contractors the world over.

Thoroseal comes in beautiful pastel colors and can be applied also to the interior surfaces of your basement walls to seal and beautify.





Get our 20-page brochure, pictorially described in detail "HOW TO DO IT"

Standard Dry Wall Products
NEW EAGLE, PENNSYLVANIA
Phone Monongahela 67

SUPERB *Vina-Lux* FLOORS



Stay Clean • Stay Beautiful • Stay New for Years!

Beautiful, colorful Vina-Lux puts *any* home on a luxury footing . . brings it new smart beauty, and new easy-keeping, long-wearing qualities.

So smoothly-surfaced it simply refuses to absorb dirt or stains, Vina-Lux requires little maintenance. No waxing is necessary to keep it looking smart and attractive. Dense, close-textured Vina-Lux has unusual resistance to many kinds of oils, greases, acids and alkalis. Its reinforced vinyl-asbestos structure shrugs off ordinary foot-traffic.

And, Vina-Lux brings you brilliant color . . a wide choice of 18 lighter, brighter colors, both marbleized and solid . . colors that are tuned to today's decorative requirements.

With an almost rubber-like flexibility, Vina-Lux has remarkable strength and springiness. It goes down perfectly over any kind of firm sub-floor. For homes, for institutions, for commercial shops . . Vina-Lux is *more* than luxurious . . because Vina-Lux will do more things . . better . . than any other flooring!

Write for your set of Vina-Lux samples and name of nearest AZROCK dealer. Detailed information and specifications sent on request.

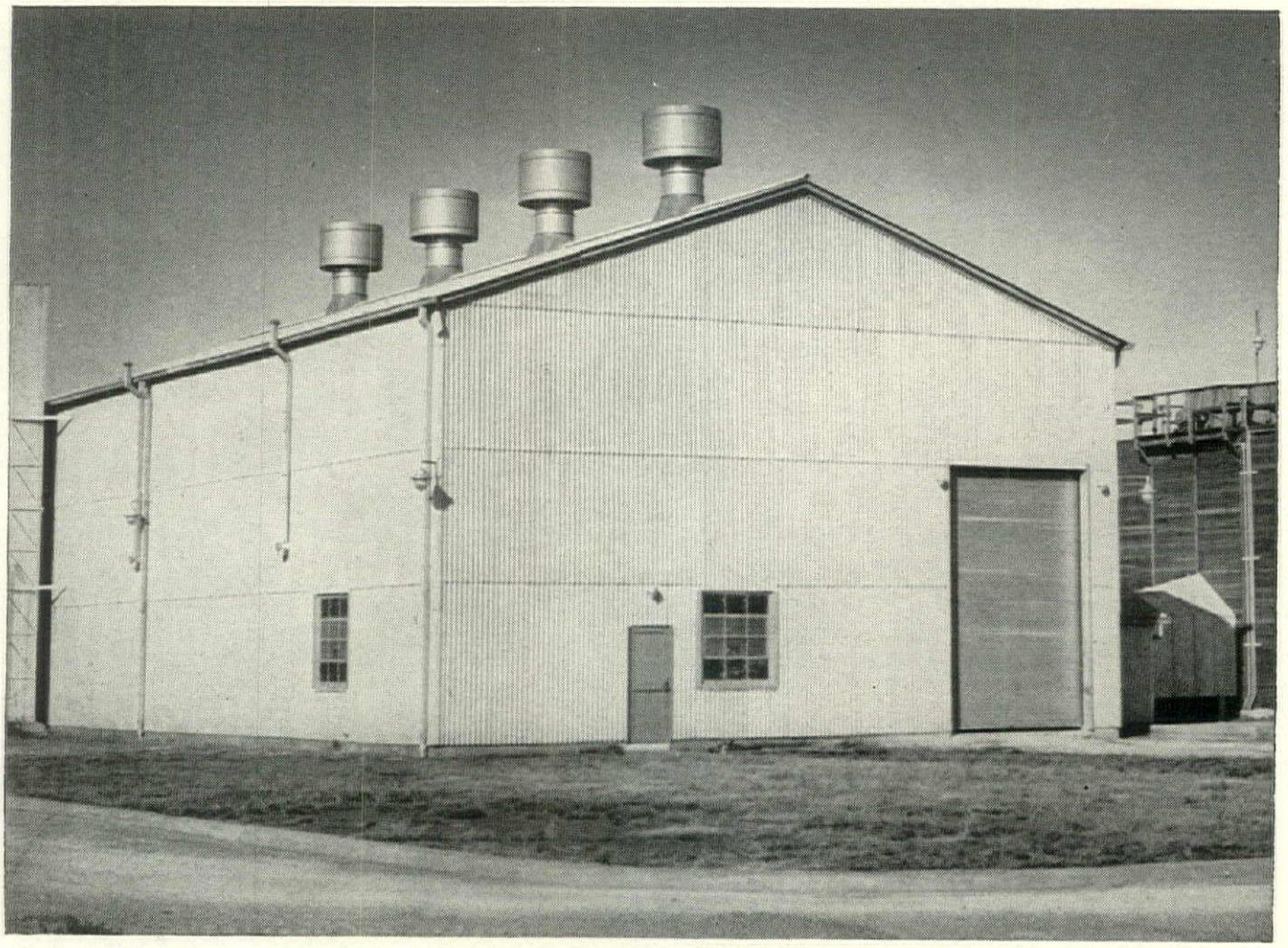
UVALDE ROCK ASPHALT CO.

FROST BANK BUILDING • SAN ANTONIO, TEXAS

Makers of AZROCK VINA-LUX AZPHLEX DURACO

"Azrock Makes Fine Floors"

AZROCK FLOORING PRODUCTS



G-E Jet Engine Generating Plant owned by Public Service Company of Oklahoma. Roof and sides covered with "Century" Asbestos Corrugated. TOP-SIDE Fasteners used throughout.

Lower your company's building costs with

"CENTURY" asbestos corrugated

The economy you enjoy when you build with "Century" Asbestos Corrugated is both widespread and considerable. You save on labor costs because workmen can easily and quickly cut, fit, drill, and handle these large strong sheets with ordinary tools. If you elect to use TOP-SIDE* Fasteners, you make an extra saving in both time and money. These ingenious fasteners are installed with a minimum of labor. Scaffolding is not required—either for the roofing, or for the siding.

Once your building is completed, you begin to realize your biggest savings. "Century" Asbestos Corrugated is completely, permanently weatherproof. It never needs a protective coat of paint. It is impervious to rodents and termites. And—perhaps most important—it *cannot* burn, rot, or rust.

It is a superior building material as hundreds of companies have found out. If you are planning new construction or modernization of existing structures, be sure you investigate the outstanding economy offered by "Century" Asbestos Corrugated. We'll gladly send you complete information on request.

*® H & B Enterprise Corporation

One of the many types of TOP-SIDE Fasteners for roofing and siding.

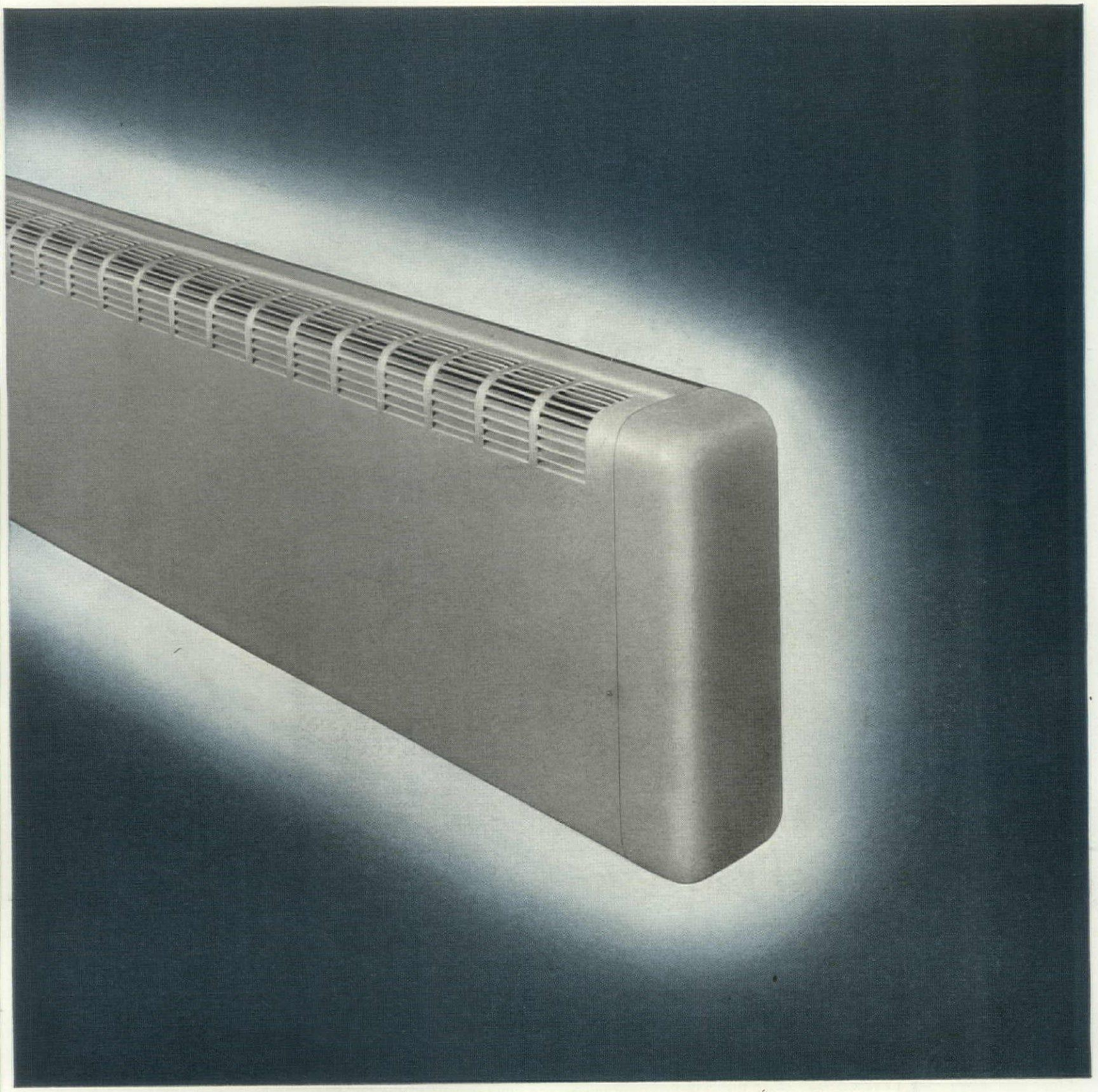




*Nature made Asbestos... **Keasbey & Mattison** has made it serve mankind since 1873*

KEASBEY & MATTISON

COMPANY • AMBLER • PENNSYLVANIA



DESIGNED FOR MODERN HEATING



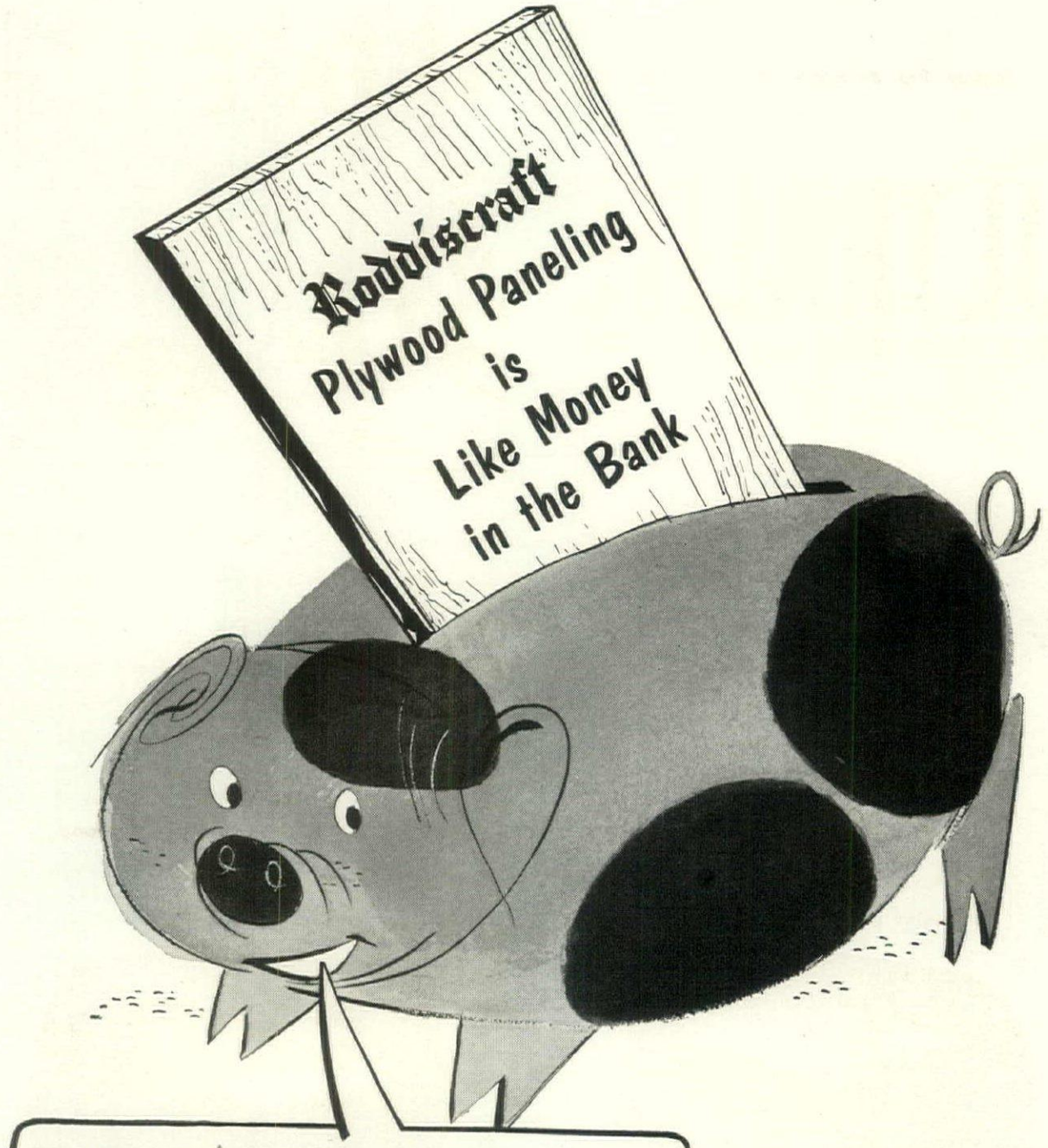
Sill-line will heat the New Pavilion, Jefferson Hospital, Philadelphia, Pa.

Vincent G. Kling, Architect
A. E. D'Ambly, Engineer
W. M. Anderson Co., Htg. Contractor

Nesbitt Sill-line offers you all the benefits of high-capacity wall-fin radiation in the first enclosure expressly styled to harmonize with contemporary building design. Here's quick, uniform, under-the-window perimeter heating that provides economy of operation, ease of installation, and wide flexibility; *plus* an entirely new concept of enclosure styling so desirable for today's institutional and commercial buildings. If you desire further information on this new product, send for Nesbitt Publication 271.

NESBITT SILL-LINE RADIATION

Made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa.



Money in the bank never asks anything of the owner — and neither does Roddiscraft plywood.

HERE'S a sales story that will help sell quality homes. Roddiscraft plywood gives — instead of taking. It gives a permanent wall that pays continuing dividends in lasting beauty. It never *takes* more and more money for painting, papering, patching, scrubbing. A Roddiscraft plywood paneling installation is a one cost job — it's a built-in part of the building — a background of beauty.

Roddiscraft is preferred 2 to 1 by architects for doors. The same quality that has made Roddiscraft doors first choice of architects for over half a century is built into Roddiscraft plywood. It's beauty with brawn—built to last and last and last.

NATIONWIDE Roddiscraft WAREHOUSE SERVICE

Cambridge 39, Mass. • Charlotte 6, N. C. • Chicago 32, Ill. Cincinnati 4, Ohio • Cleveland 4, Ohio • Dallas 10, Texas Detroit 14, Mich. • Houston 10, Texas • Kansas City 3, Kan. Los Angeles 58, Calif. • Louisville 10, Ky. • Marshfield, Wis. Miami 38, Fla. • Milwaukee 8, Wis. • New Hyde Park, L. I., N. Y. • New York 55, N. Y. • Port Newark 5, N. J. • Philadelphia 34, Pa. • St. Louis 16, Mo. • San Antonio 6, Texas • San Francisco 24, Calif. • San Leandro, Calif.

Roddiscraft

RODDIS PLYWOOD CORPORATION
Marshfield, Wisconsin

how to move air without FAN-FARE

use

ULTRALITE

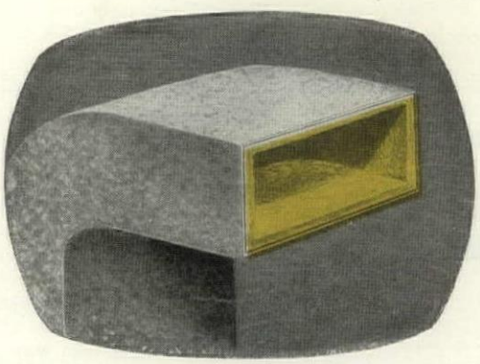
DUCT INSULATION and DUCT LINER



ULTRALITE Duct Liner reduces fan chatter to a w-h-i-s-p-e-r — and it's so easy to install! The long glass fiber captures and absorbs fan noise, lets heating and air conditioning systems run at peak efficiency without disturbing anyone.

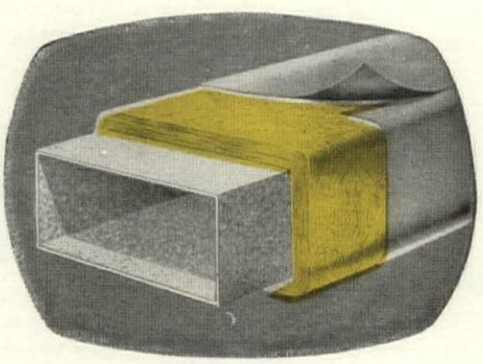
And ULTRALITE Duct Liner is easier and more economical to install than any liner you've ever used! You can cut it with a knife . . . run it quickly around curves and corners . . . fasten it securely in place with cement or screws and washers.

For the same good reasons, you'll want to use ULTRALITE Duct Insulation. It goes on faster, cheaper, and does a better job of keeping heat and cold where they belong. You have a choice of *4 attractive vapor barrier facings,* one of which is tailor-made for your particular condensation problem.



ULTRALITE—the duct liner that won't burn!

Ultralite Duct Liner is a flexible, semi-rigid glass fiber insulation designed specifically as an acoustical duct liner, with excellent sound-absorbing properties. It won't break, chip or delaminate—won't flake off in air stream! You can run it quickly around curves and corners, run it through the brakes and shears with the metal, fasten it in place with screws and washers or adhesives.



ULTRALITE—the easy-to-install duct insulation!

It's "duct soup" to wrap air ducts with Ultralite Thermal Duct Insulation—it's as easy as wrapping a package! Ultralite Duct Insulation is available plain or with your choice of 4 different vapor barrier facings, already adhered to the insulation. Ultralite is non-irritating, pleasant to handle, fire-resistant and non-corrosive to metals. K-factor is very low—and so are applied costs!

See Sweet's File (Architectural) or the Yellow Pages for name and address of your local Ultralite distributor.

GUSTIN-BACON MANUFACTURING CO.

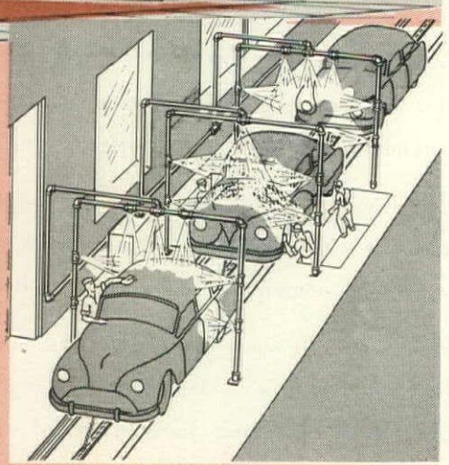
214 W. 10th St., Kansas City, Missouri

New York • Chicago • Philadelphia • San Francisco • Los Angeles • Houston • Tulsa • Fort Worth • Detroit

Springing Up Everywhere— Conveyorized Wash Racks!



In Detroit there are now 201 conveyorized car washing establishments. With the Motor City setting the pace, other cities are now following. The trend has started . . . car dealers, service outlets, and men seeking a profitable investment are becoming aware of the substantial profits being made from these new systems. It's an established fact that the modern, clean-cut building is the one that pulls the trade. Architects are being called on to "go all out" with design. They can do this only when they know their equipment requirements. The source for information is the source for the equipment: Wash Racks, Inc. of Detroit—the only organization specializing in customized engineering of mechanical requirements and the designing and manufacturing of the equipment and chemicals for washing.



Wash Racks, Inc. equipment permits freedom and cleanness of design.

SEND FOR THIS FILE FOLDER OF FACTS



FOR YOUR FILES:

"Designing a Conveyorized Car Wash Building"

This comprehensive folder has all this vital information you need to design a conveyorized car wash building: 1. Answers to most-asked questions. 2. Information for writing specifications. 3. Blank plan for layout. 4. Information on equipment for all sizes and types of installations. Write for it today.

wash racks, inc.

5140 STANTON AVENUE
DETROIT 8, MICHIGAN

Engineers, Designers, and Manufacturers of Equipment and Chemicals for Modern Car Washing

Conveyorized Wash Racks • Single Stall Wash Racks
Engine Cleaners

Wash Racks, Inc.
Please send folder,
"Designing a Conveyorized Car Wash Building"

Name_____

Title_____

Company_____

Address_____

EVENTS TO COME

Built in USA—exhibition at the Museum of Modern Art, New York City; continuing through **Mar. 12.** Includes 43 postwar buildings selected for quality and contemporary significance shown in models, color slides and photos. (See review elsewhere in this issue.—Ed.)

Fellowship—Princeton's School of Architecture announces the Lowell M. Palmer Fellowship in Architecture ($1,200) to assist a student of unusual promise to undertake the advanced study of architecture at Princeton. Applicants must be US citizens, holders of a bachelor's degree, less than 27 yrs. old on Oct. 1, 1953. Applications and supporting documents are due by **Mar. 1.** For further details and application blanks, address: The Secretary, School of Architecture, Princeton University, Princeton, N. J.

Associated General Contractors' annual convention, Miami, **Mar. 23-28.**

European study tour of interest to professionals and students of urban planning, housing and architecture, **June 15-Aug. 16.** Sponsored by Planning & Housing Div. of Columbia's school of architecture. Applications must be approved before **Apr. 1.** For information address: Prof. J. Marshall Miller, 504 Avery, Columbia University, New York 27, N. Y.

Building Officials Conference of America, 38th annual convention, **Apr. 6-9** at the Baker Hotel, Dallas, Tex.

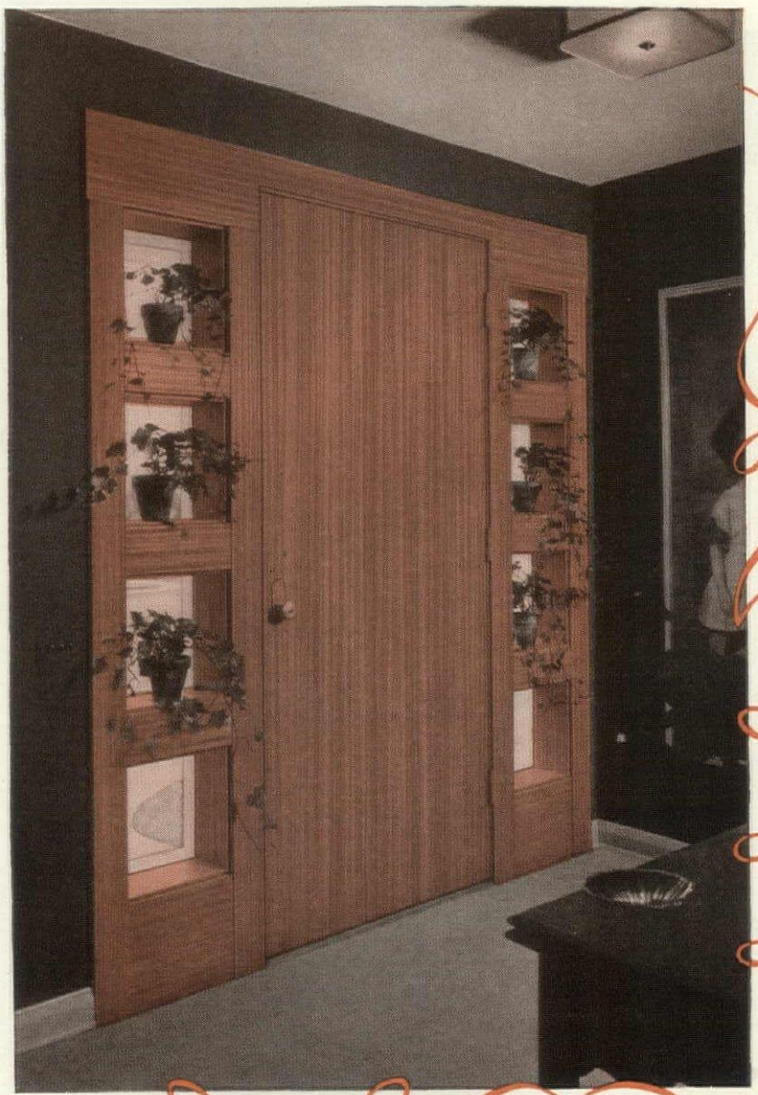
Competition—Ponderosa Pine Panel Door Design Competition to obtain designs for interior panel doors suitable for mass production methods and consistent with current standards of architectural design. Prizes total $7,600, including $1,000 in student and school awards. AIA approved; closes **Apr. 27.** For program write: Ponderosa Pine Woodwork Competition Headquarters, 2907 W. Pico Blvd., Los Angeles 6, Calif.

Competition—Beaux-Arts Institute of Design announces competition open to all students in accredited schools or recognized architectural workshops. Problem: a municipal library to serve as the cultural center of a town. Freedom in design and presentation will be encouraged and entries may be accompanied by detailed written explanation. Object of competition is to test and compare different design approaches and educational procedures. Program ready about Mar. 1; entrants allowed 5 wks. only, closing not later than **May 1.** Address: Special Design Competition, BAID, 115 E. 40th St., New York 16, N. Y.

Store design competition in connection with National Store Modernization, Building & Maintenance Show, **June 9-12,** Madison Square Garden, New York City. Awards total $10,000; classes include suburban shopping center, suburban branch department store, supermarket and various specialty shops. AIA approved. For particulars write: Caleb Hornbostel, AIA (Professional Advisor), 80 W. 40th St., New York, N. Y.

American Institute of Architects' annual convention: Seattle, Wash., **June 16-19.**

School Planning Workshop—3-wks. course of lectures, seminars, field trips conducted by University of Colorado, **July 27-Aug. 14.** For details write: Prof. Thomas L. Hansen, AIA, Head, Department of Architecture & Architectural Engineering, University of Colorado at Boulder.



MENGEL

Mahogany

FLUSH DOORS

ADD $$$ TO HOUSE VALUES—

YET COST LESS THAN MANY DOMESTIC WOODS!

Genuine African Mahogany is recognized everywhere as the King of Woods — is far more *desirable* than ordinary woods.

Mengel Mahogany Flush Doors are built with faces of genuine African Mahogany, which *automatically* upgrades any building in which it is used.

Yet you can buy Mengel Flush Doors, or Standardor Flush Doors, with faces of genuine African Mahogany, for fewer dollars than you'd pay for comparable doors of almost any domestic wood!

The Mengel Company operates its own logging concession and mill in the best Mahogany section of Africa, and imports this King of Woods in tremendous volume. *You get the savings!*

Equally important, Mengel and Standardor Flush Doors are built *better*, to give *better service*. Compare specifications, either in Sweet's or at your dealer's. You'll be glad you investigated!

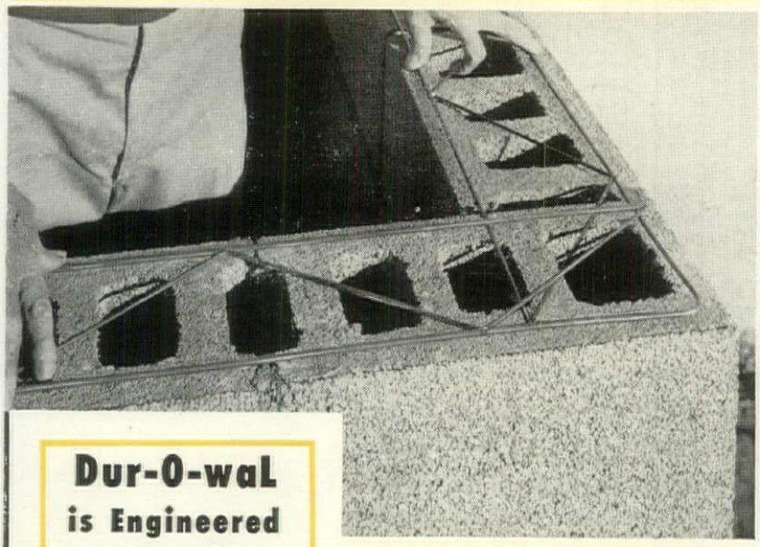
Door Department
THE MENGEL COMPANY
Louisville, Kentucky

Why Experts Specify

DUR-O-WAL

WITH TRUSSED Design

. . . the Backbone of Steel for Every Masonry wall!



Dur-O-waL is Engineered to Provide

EXTRA STRENGTH
Not ordinary, but premium quality steel to special specifications provides high strength (100,000 p.s.i.) in limited mortar area.

TIGHTER MORTAR JOINTS
Compact Dur-O-waL unit is used in the new standard modular 3/8" mortar joint. Flush-designed Dur-O-waL is butt welded to do the job!

SPEED, ECONOMY
Because of the quality hardness of the steel and manufacturing precision, Dur-O-waL readily falls into place. Stiff, electrically-welded Dur-O-waL eliminates the wasteful inefficiency of unwieldy rods; cuts building time and costs.

DEPENDABLE SUPPLY
With the present increase in steel supply, indications are that Dur-O-waL will continue to be available for prompt delivery. Because of the demand, our manufacturing and service facilities have been increased to take care of your requirements.

NEW Flush-Weld

Speeds Finer Appearance of Finished Wall

● Enduring, crack-free beauty is built into every wall where Dur-O-waL is used as a backbone of steel. Patented, custom-designed Dur-O-waL is now available with both lap and butt weld to provide vertical and horizontal reinforcing for block, brick and tile and as a tie unit for face brick and back-up block.

Architects! Be sure the beauty you design will long endure. Send today for Dur-O-waL facts. Write plant nearest you.

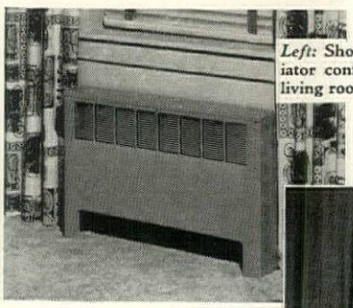
DUR-O-WAL PRODUCTS, INC
P.O. Box 628
Syracuse 1, N. Y.

DUR-O-WAL DIVISION, Dept. 651
Cedar Rapids Block Company
Cedar Rapids, Iowa

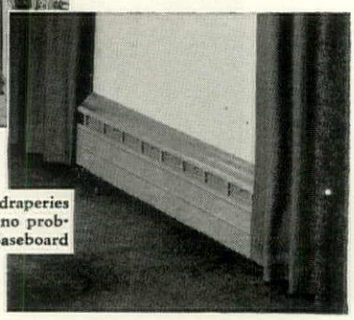
every day
more and more
ARCHITECTS
SPECIFY

FEDDERS

BASEBOARD
and
CONVECTOR
RADIATORS



Left: Showing how Fedders Convector-Radiator conforms to modern decor of smart living room.



Arrangement of furniture, draperies and wall-to-wall carpeting presents no problem when Fedders non-streak Baseboard Radiators are specified.

● Men of the architectural profession as well as contractors and jobbers welcome the handsome appearance, heat transfer efficiency, easy installation and low cost of Fedders Convector and Baseboard Radiation. They make it possible for clients to enjoy the proven comfort and health of steam or hot water heating.

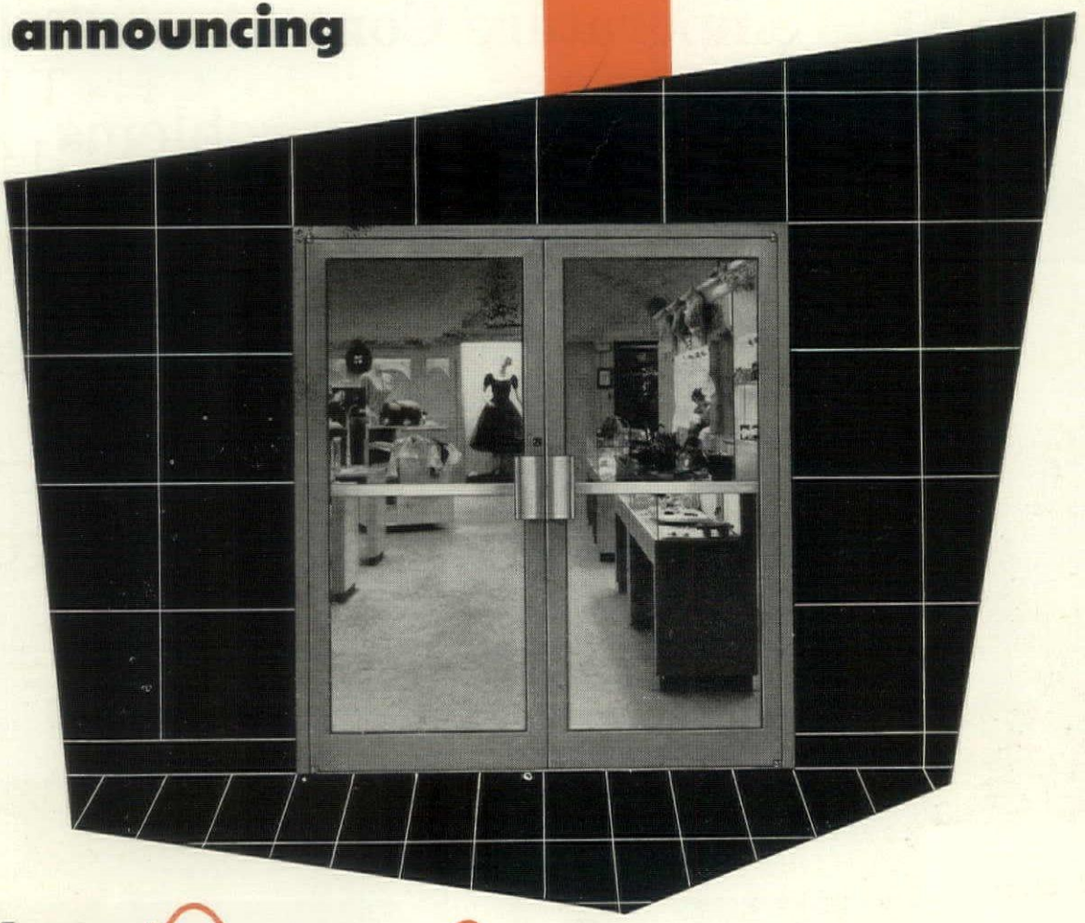
Fedders catalogs are working tools for men who design and install heating systems. Information is complete and accurate. Write for your copies.

FEDDERS-QUIGAN CORPORATION
57 Tonawanda Street, Dept. AF-2, Buffalo 7, N. Y.

Please send me information on advantages of Fedders low-cost Baseboard and Convector Radiators for steam and hot water heating.

Name .....
Concern .....
Street .....
City ..... **State** .....

announcing



the Overline door

in Hollow Steel

NARROW STILES for

MODERN ENTRANCES

New—this latest Door by Overly is economically styled in steel! **Modern**—has narrow sight lines and large glass area, since stiles are but 3″ wide. **Rigid**—it's made of double thickness 18 gauge steel. **Stronger**—it's actually heavier in construction than most hollow steel doors now on the market. **Moderately Priced**—because Overly has standardized the sections. Specifications and details are given in our Folder "NS." Write us!

APPLICATIONS

Store Fronts
Schools
Auditoriums
Hospitals
Hotels
Apartments
Gymnasiums
Other Entrances

▶ **SEND FOR FOLDER "NS"**

OVERLY MANUFACTURING COMPANY

Greensburg, Pennsylvania • Los Angeles 39, California



How Honeywell Customized Temperature Control can help solve the heating problems of the nation's churches

Specially designed Honeywell system provides superior comfort, saves fuel in Denver's new Messiah Lutheran Church.

For a good many years. churchmen have been faced with several of the most difficult of all heating control problems.

How do you regulate the heat of a church so that its main areas are not uncomfortably hot on worship days when the gathering is large? How do you make sure it won't be too cold when bad weather keeps attendance down? And during the week, how do you maintain comfort in offices and auxiliary rooms without burning a lot of costly fuel to heat the whole building?

The way these problems have been met—by Honeywell Customized Temperature Control—in the Messiah Lutheran Church in Denver may well serve as a model for the rest of the nation.

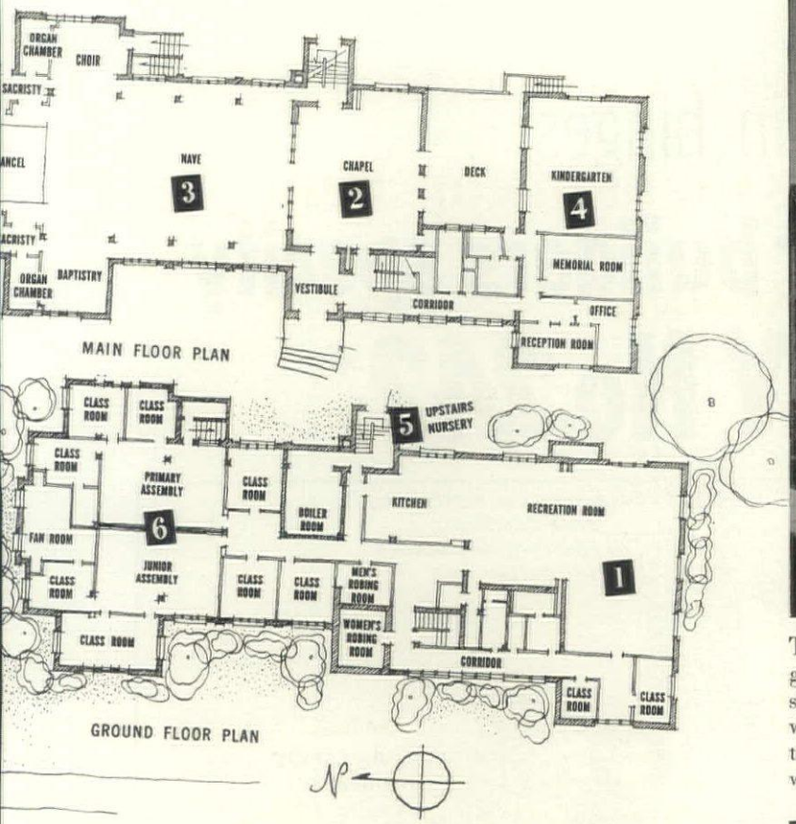
For today, with ten adjustable Honeywell thermostats controlling seven temperature control zones, (the seventh, a perimeter zone, is not shown on the floor plan), all areas of the Messiah Lutheran Church are comfortable all the time. And fuel consumption is held at an economical level.



Six thermostats control comfort in two zones of nave

The area embracing the altar, choir section, and front portion of the nave proper is included in one zone. Here one thermostat controls the radiant floor panel while two others, on either side of the altar, control the heating and ventilating system discharging at the grilles shown in the ceiling. The rear part of the nave and the chapel are controlled as a separate zone. Also in this area, two special electric thermostats regulate the temperature of the organ pipes in each organ chamber to guarantee proper tuning.

Architect: Raymond Harry Ervin, Denver
Mechanical Engineers: Marshall & Johnson, Denver





This photo of the exterior of the Messiah Lutheran Church gives a good idea of the clean architectural lines of the building, which was designed by Denver architect Raymond Harry Ervin. Also, it shows the wide variety of weather exposures of the structure. But Honeywell Customized Temperature Control as easily compensates for strong northern winds as it does for sunshine on a bright winter day.



And this view of the upstairs nursery shows how well the younger set fares at the Messiah Lutheran Church. A separate Honeywell thermostat here can be adjusted to compensate for weather conditions and the number of children in attendance. Temperatures are usually kept warmer here—a turn of the dial on the thermostat takes care of that—so youngsters won't be exposed to drafts on the floor. Whenever this room is not in use, the thermostat is set back to help save fuel.

For comfortable, even temperature in new or existing buildings—of any size—specify Honeywell Customized Temperature Control

Whether it's a church, school, office, factory, hospital, apartment, store, garage—or any size building—new or existing, Honeywell Customized Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control problems.

Once equipped with Honeywell Customized Temperature Control, they'll have an ideal indoor "climate"—and save fuel besides.

And with a complete line of pneumatic, electric and electronic controls to choose from, Honeywell Customized Temperature Control offers you the greatest flexibility in design. Then, too, when it comes to performance, Honeywell-built controls assure years of trouble-free operation. And they're backed by the finest service organization in the controls industry.

For information on Honeywell Customized Temperature Control, call your local Honeywell office. There are 104 across the nation. Or mail the coupon today.

MINNEAPOLIS
Honeywell

First in Controls

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. MB-2-45, Minneapolis 8, Minnesota
Gentlemen:

I'm interested in learning more about Honeywell Customized Temperature Control.

Name _____

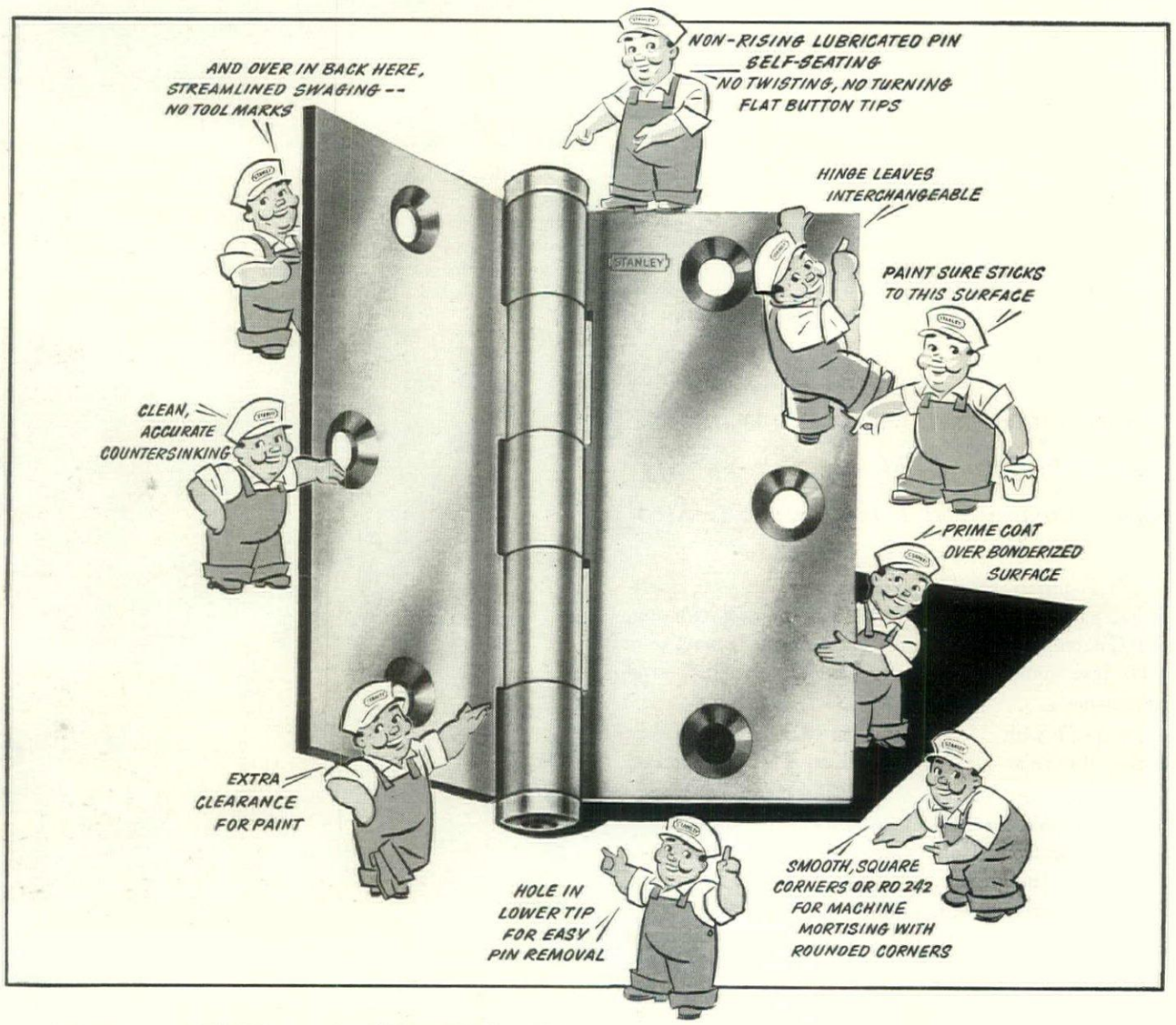
Firm Name _____

Address _____

City _____ *Zone* _____ *State* _____

There is a difference in hinges

Here's why most builders specify STANLEY No. 242*



When you specify Stanley No. 241 or 242 Butt Hinges for doors of residences, apartment houses and other medium weight low frequency wood doors, you *know* the hinges will endure for the life of the building. Generations of architects and builders have made the Stanley 241 Hinge the Standard of the World.

***No. 242,** *Flat Button Tip prime coated for painting.*
No. 241, *regularly furnished with ball tip in plated finishes, flat button tip on order (FBT).*

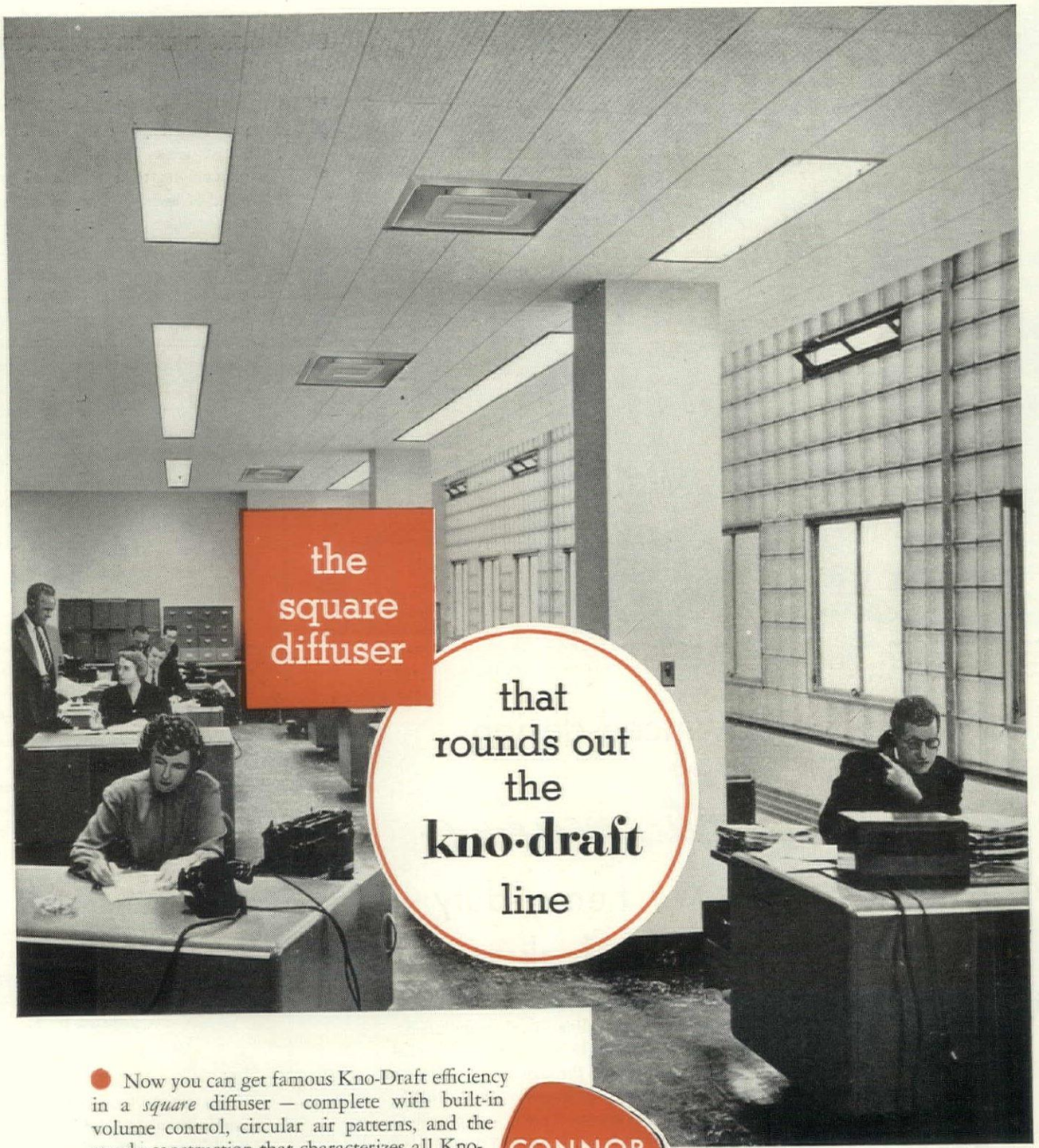
REMEMBER . . . THREE HINGES TO A DOOR

The Stanley Works, New Britain, Conn.

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS
STEEL STRAPPING • STEEL



Now you can get famous Kno-Draft efficiency in a *square* diffuser — complete with built-in volume control, circular air patterns, and the sturdy construction that characterizes all Kno-Draft Air Diffusers.

The picture shows the Kno-Draft *Square* Diffuser, Type KPT, designed for T-bar installations. It snaps easily and snugly into perforated acoustical-type ceilings. For overlapping installation, Type KP is the unit to use.

Heating and air conditioning men who have installed the new Kno-Draft *Square* Diffusers will tell you these handsome units do an outstanding job. Naturally. They're made by men who have been "engineering air" for more than twenty years.

Quickest way to get full engineering information on Kno-Draft *Square* Diffusers is to clip the coupon and mail it to W. B. Connor Engineering Corporation, Danbury, Connecticut.

CONNOR ENGINEERING CORPORATION

kno·draft ®

adjustable air diffusers

CONNOR ENGINEERING CORP.
Dept. D-23, Danbury, Connecticut

Please RUSH full information on the new Kno-Draft *Square* Diffusers.

Name .....

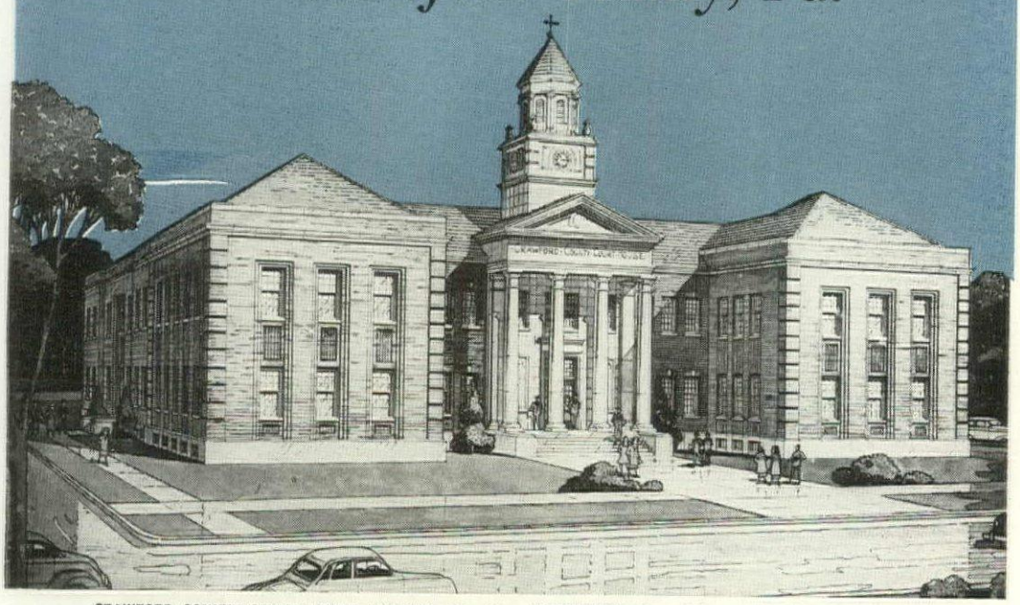
Position .....

Company .....

Street .....

City ..... Zone ..... State .....

Pride of Crawford County, Pa.



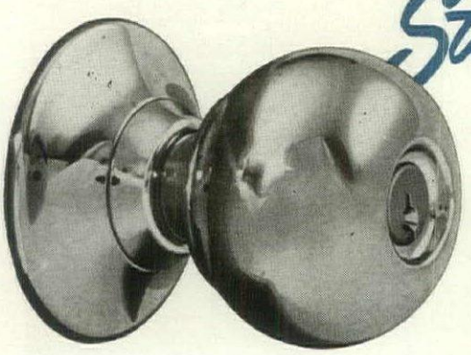
CRAWFORD COUNTY COURT HOUSE, Meadville, Pa., is being equipped throughout with Russwin builders' hardware — "Stilemaker" locks, fire exit bolts, door closers, door stops. **DEALER** — McEnery Co., Erie, Pa.

ARCHITECTS—Hanna & Stewart, Merchants Bank Building, Meadville, Pa.
GENERAL CONTRACTOR — L. H. Ludwig & Co., Inc., Falconer, N. Y.

. . . gets the advanced-design

"Stilemaker"

heavy-duty lockset

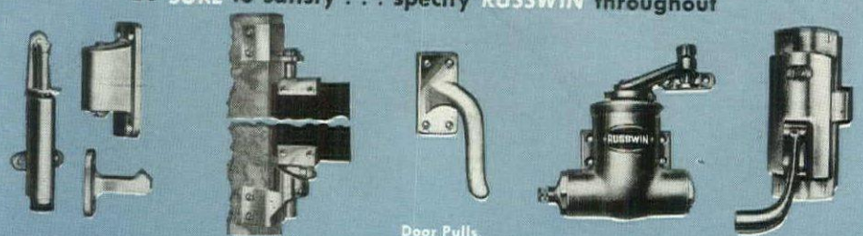


Smart styling, simple installation and trouble-free operation have led architects throughout the country to specify the Russwin "Stilemaker". This precision-made lock provides extra long life, utmost security. It is available in five designs and 26 functions. Send for detailed information. Russell & Erwin Division, The American Hardware Corporation New Britain, Connecticut.

RUSSWIN®
"Stilemaker"

THE "YEARS AHEAD" LOCK FOR "YEARS AHEAD" BUILDING

Be *SURE* to satisfy . . . specify *RUSSWIN* throughout



Door Stops and Holders | Gravity Pivot Hinges | Door Pulls, Push Plates, etc. | Surface Door Closers | Fire Exit Bolts

LETTERS

NEW THINKING ON AIR TERMINALS

Sirs:

I liked your article, "New Thinking on Airport Terminals." (AF, Nov. '52.) The comment about most airport terminals being "dull monuments to a misplaced civic pride—instead of handsome buildings designed for the efficient handling of planes, people and baggage," is excellent.

You can get everything at an airport—gifts, newspapers, food, drinks, peep shows, or what have you—but you can't get your baggage. If some architect or engineer would design a system which would enable reasonably efficient airline employees to deliver baggage from incoming planes 5 mins. after they landed, he would earn the undying gratitude of millions of passengers and quite a few airline presidents.

G. T. BAKER, *president*
National Airlines
Miami, Fla.

Sirs:

Congratulations on the interesting feature on airport terminals. This comprehensive analysis certainly offers some interesting solutions to our current airport problems, and I hope every airport manager will have an opportunity to study the article as he plans his future construction program.

C. E. WOOLMAN
President and general manager
Delta Air Lines, Inc.
Atlanta, Ga.

Sirs:

Interesting, informative and constructive. . . .

HERBERT H. HOLLWEG JR.
Regional airport architect
Civil Aeronautics Administration
Jamaica, N. Y.

Sirs:

Your article on airport terminal buildings should stimulate thinking on this subject. I found it most interesting and well presented.

GLENN E. MARKET, *assistant secretary*
American Airlines
New York, N. Y.

Sirs:

Congratulations on the excellent verbal and graphic presentation of the latest thinking on airport terminals.

P. A. HAHN, *chief airport engineering div.*
Civil Aeronautic Administration
Department of Commerce
Washington, D. C.

Sirs:

Congratulations on your fair and accurate appraisal of the many difficulties facing the designer of airport terminal buildings.

Your "six fundamental questions" are a shrewed analysis of the basic problem. I certainly wish all the stations served by Capital Airlines had been designed with these questions in mind. It would have made our passengers and our operations people a lot happier.

You are probably right in saying that pressures exerted by the airlines have been one of the designer's troubles, but I don't think that is as true now as it used to be. The airlines have discovered that it is to their ultimate advantage to help the architect produce the most functional building rather than merely competing for a favored location for a ticket counter. In fact, it has been our experience that, in some instances, the airlines have been more concerned with reasonable circulation flow and economical construction than has the architect. We have encountered architects, some of whom rank high in their profession, who seemed more interested in producing a monument to civic pride than they were in learning a little about the kind of building required by modern air travel.

Fortunately, the terminals currently being planned exhibit a much more intelligent approach to the problem.

I take issue with your writer on one point —that the centralized terminal evolved from the unit-type plan. Actually it was the other way around. After the war, when the airlines foresaw the problem of getting more and bigger planes close up to a central building, the unit system was devised. It was tried out in Chicago's "temporary" terminal at Midway Airport. Needless to say, the disadvantages of this system were amply demonstrated. I think few airlines would favor this solution now.

The airlines agree wholeheartedly with your statement that "profitable concessions help make a successful terminal" and with what you say about the dangers of overestimating the number and size of concessions. In fact, it should be pointed out to all designers that the food concessionaire cannot make money if his kitchen is on one floor, his coffee shop on another floor and his main dining room on still a third level. The same goes for the airlines. When our offices are scattered about the building on several floors, they are bound to create built-in expenses.

J. H. CARMICHAEL, *president*
Capital Airlines
Washington, D. C.

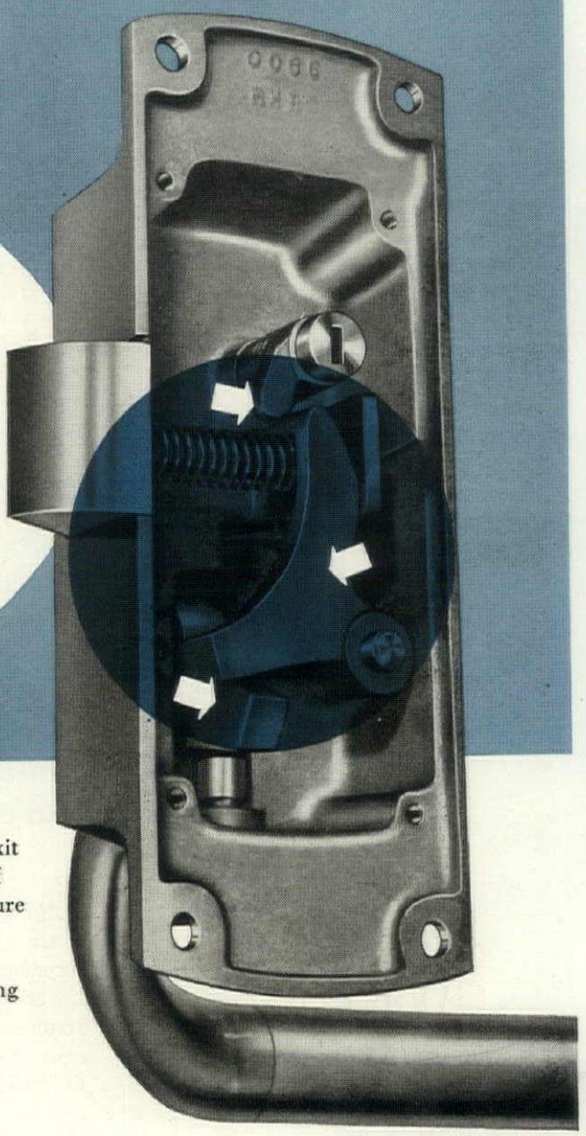
Sirs:

The article, "New Thinking on Airport Terminals," has been reviewed by members of our staff and we generally agree that it is an exceptionally interesting and well-written presentation of many of the problems encountered.

Certainly, the successful terminal must comply with each of the six fundamentals for design mentioned in the article. Failure to do

continued on p. 78

Preference of
Safety-minded Architects



You'll find dependable safety in the simplicity of a Russwin fire exit bolt. It has a minimum number of parts . . . unit construction to assure permanent alignment . . . Oilite bearings to provide trigger-fast, trouble-free action. There's nothing to bind. Other features include drop-forged levers, self-latching construction, and a fool-proof dogging device.

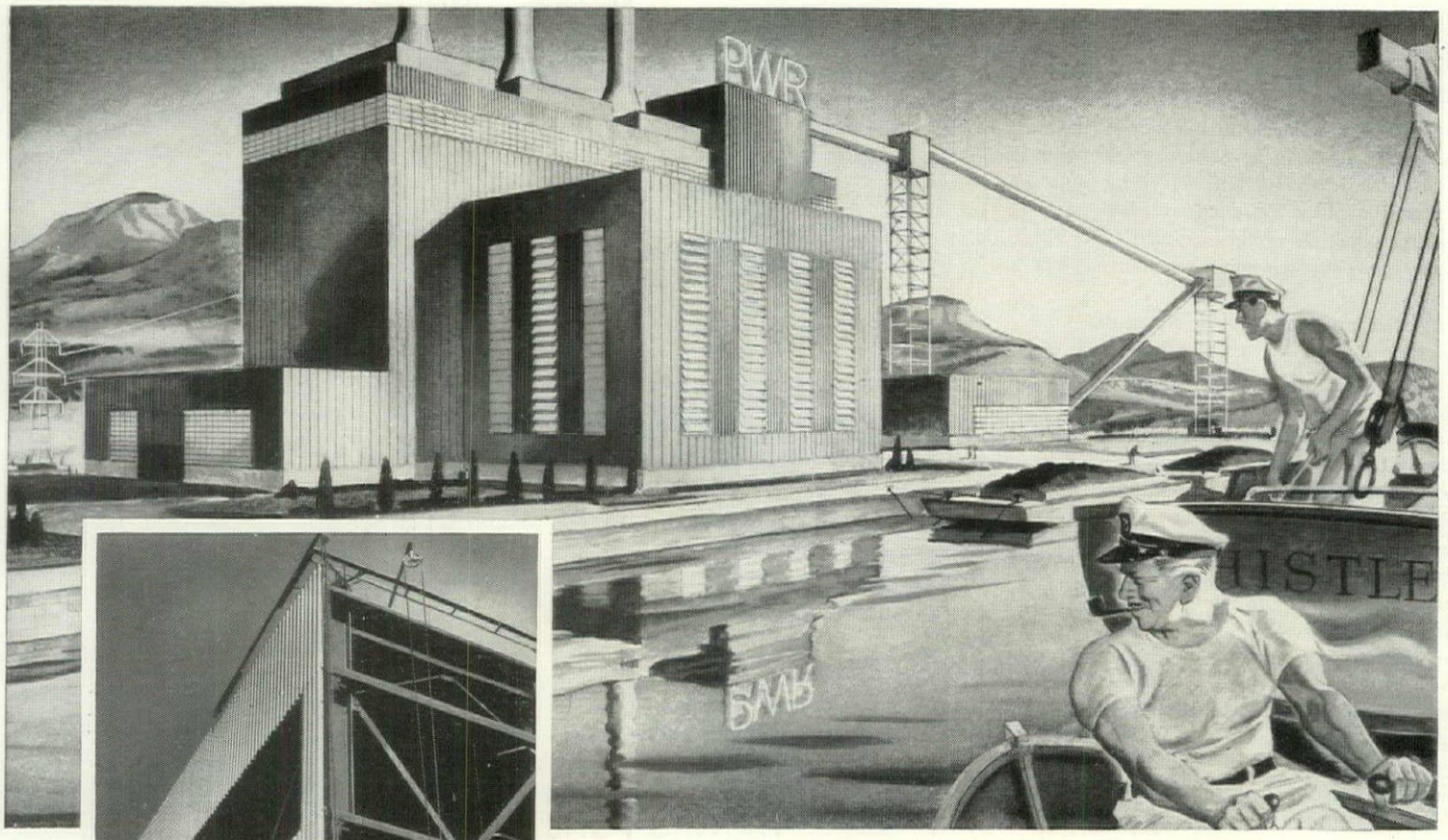
You can specify Russwin with absolute confidence for *all* of your builders' hardware requirements. Illustrated below are leading items in the complete Russwin line. Russell & Erwin Division, The American Hardware Corporation, New Britain, Connecticut.

SINCE 1839
RUSSWIN®
DISTINCTIVE HARDWARE

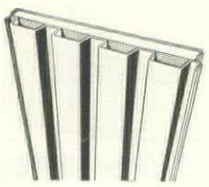
Be SURE to satisfy . . . specify RUSSWIN throughout



"400" Closers | Overhead Door Holders | Miscellaneous Hardware | "Ten Strike" Cylinder Locks



Modern, money-saving sidewalls for Power Plants— *and all other buildings, too!*



This is a Q-Panel

First comes the flat interior (can be fluted). Then 1½" or more of non-combustible insulation. Then an exterior of stainless, aluminum, Galbestos* or metallic-coated steel in various forms. All sections are sealed against infiltration. Send for Structural details.

***Galbestos** is a Robertson product available as roofing or as an exterior surface for Q-Panels. It is made of sheet steel with asbestos felt bonded to it with molten metal. The felt is impregnated for greater durability then given a special asphaltic waterproofing. So complete is the bond that Galbestos may be shaped and worked on sheet metal equipment. Write for special Galbestos Booklet.

Builders of power plants as well as all other types of industrial and commercial structures are rapidly coming to realize the advantages of Q-PANEL sidewall construction. Q-PANEL walls provide true economy for the following reasons: 1. *Q-Panels are permanent construction, dry, and noncombustible,* yet may be demounted and re-erected elsewhere with 100% re-use. 2. *Q-Panels are light in weight* (7 pounds per square foot) thus reducing the load-bearing necessity in framing and foundations. 3. *Q-Panels have high insulation value* . . . superior to a 12" masonry wall with furred plaster interior. 4. *Q-Panels are quickly installed* because they are hung, not piled up. An acre of wall has been hung in 3 days with only 25 men. 5. *Q-Panel walls are handsome.* The exterior surface can be of various forms and either field painted, galvanized steel, stainless, aluminum or Galbestos*, thus providing a wealth of decorative combinations. *We have a booklet* available giving complete details and showing modern, lightweight, quickly-installed Q-Panels in use in many buildings. Write for it without obligation.

Robertson
Q-PANELS
for modern insulated wall construction

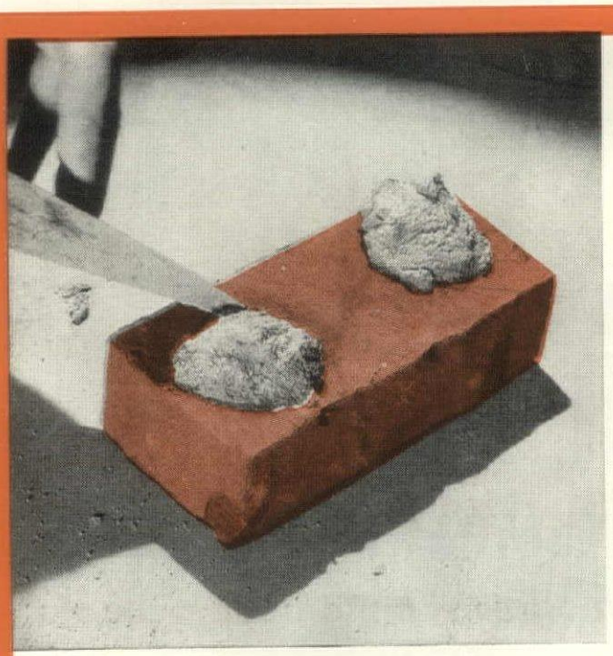
A Product of **H. H. Robertson Company**

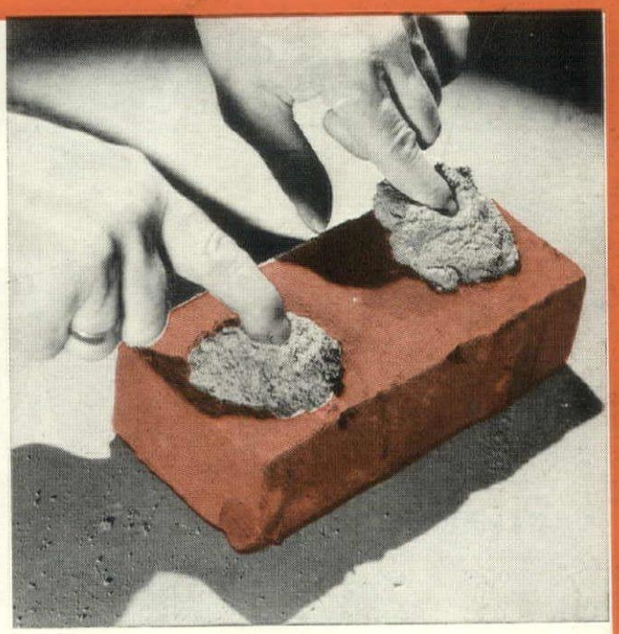
2403 Farmers Bank Building • Pittsburgh 22, Pennsylvania

Offices in All Principal Cities in the United States and Canada
World-Wide Building Service

BRIXMENT MORTAR

has better water-retention





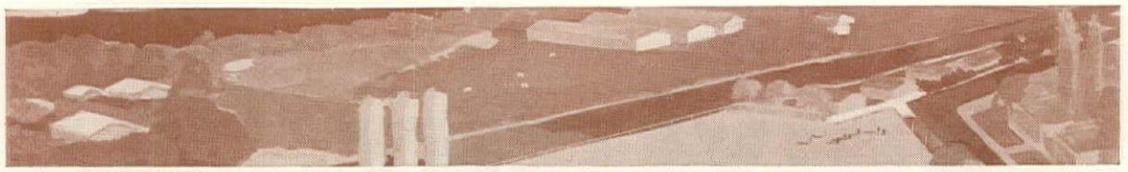
Here's the way to test for high water-retention. Slap a small dab of any two mortars onto a brick. Wait a minute, then feel each dab. The one that stays plastic longest will be the one having the highest water-retention. Try this with Brixment mortar!

—AND HIGH WATER-RETENTION IS ESSENTIAL TO WELL-BONDED, WATERTIGHT MASONRY

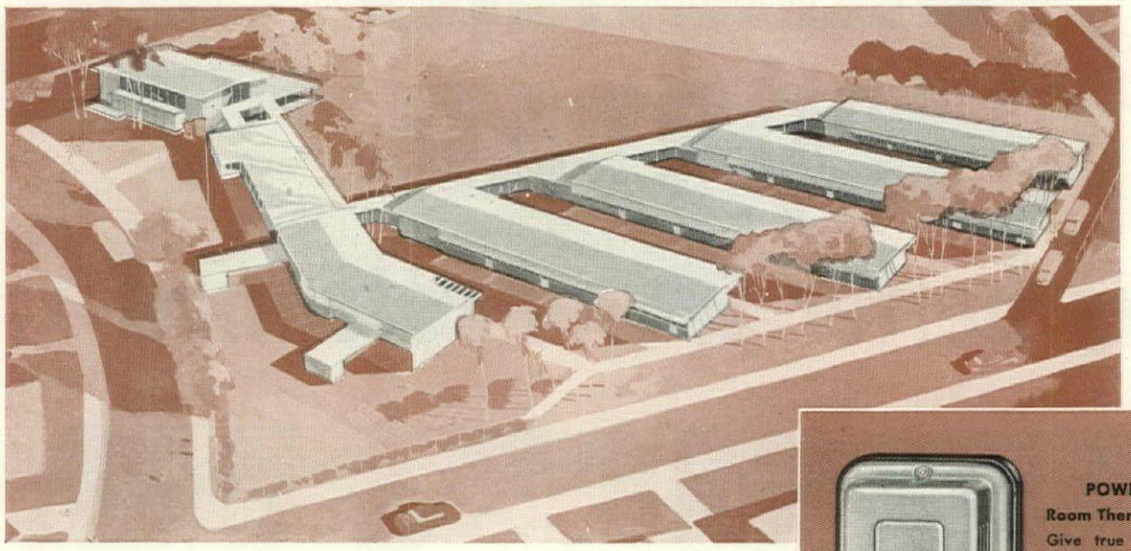
Water-retaining capacity is the ability of a mortar to retain its moisture, and hence its plasticity, when spread out on porous brick. ● High water-retaining capacity is of *extreme importance* in mortar. If the mortar does not have high water-retaining capacity, it is too quickly sucked dry by the brick; the mortar stiffens too soon, the brick cannot be properly bedded, and a good bond cannot be obtained.

Brixment mortar has extremely high water-retaining capacity. It strongly resists the sucking action of the brick. Brixment mortar therefore stays smooth and plastic longer, when spread out on the wall. *This permits a more thorough bedding of the brick, and a more complete contact between the brick and the mortar.* The result is a better bond, and hence a stronger and more *water-tight wall.*

Louisville Cement Company, *Incorporated*, Louisville 2, Kentucky.



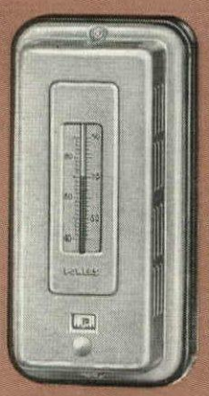
THOMAS B. MOFFITT SCHOOL, NORWALK, CALIFORNIA



Architects
KISTNER, WRIGHT and WRIGHT
(Successors to Kistner, Curtis and Wright)

Chief Mechanical Engineer
CHESTER D. WALZ

Heating Contractor
DAVIS PIPING CO., Whittier, Calif.



POWERS
Room Thermostats
Give true gradual control. Are noted for their continuous accurate, dependable operation. Many give over 25 years of service without repairs.

Small Size
5⅝" H x 2⅞" W by 2⅛" deep, fit into small vertical spaces.



POWERS

Pneumatic Systems of TEMPERATURE CONTROL

Installed in These Modern Elementary Schools

IN 1978 – these and hundreds of other schools on their silver anniversary very likely will award "A's" to Powers "for dependable temperature control with a minimum of maintenance."

25 to 40 years of reliable low-maintenance-cost service is frequently reported by Powers users. Some installations made in 1901 to 1910 are still in operation and giving good control. Recent design improvements in Powers equipment will not only give better control but an even longer life expectancy . . . greater comfort and lower operating costs. When you want help in selecting the type of temperature control best suited for your requirements – contact Powers nearest office. There's no obligation.

Established in 1891 • THE POWERS REGULATOR COMPANY • SKOKIE, ILL. • Offices in Over 50 Cities

(b5)

MODERN CONTROLS FOR MODERN SCHOOLS



POWERS NO-PAK PACKLESS VALVES

. . . require no maintenance of packing. They prevent leakage of water or steam

VARIOUS TYPES AND SIZES FOR ALL REQUIREMENTS

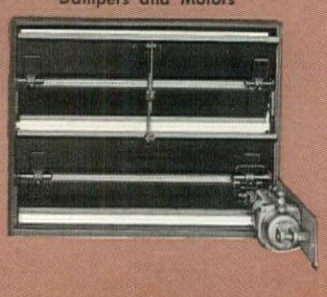


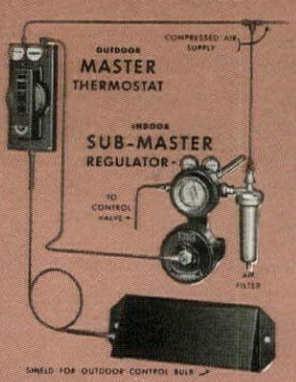
Powerful Small Top Valve, with angle or straight-way union; Reverse Flow Angle with double female unions; also flared ends and screwed end bodies.



Airstream Thermostat for Unit Ventilators

Complete line of modern Dampers and Motors





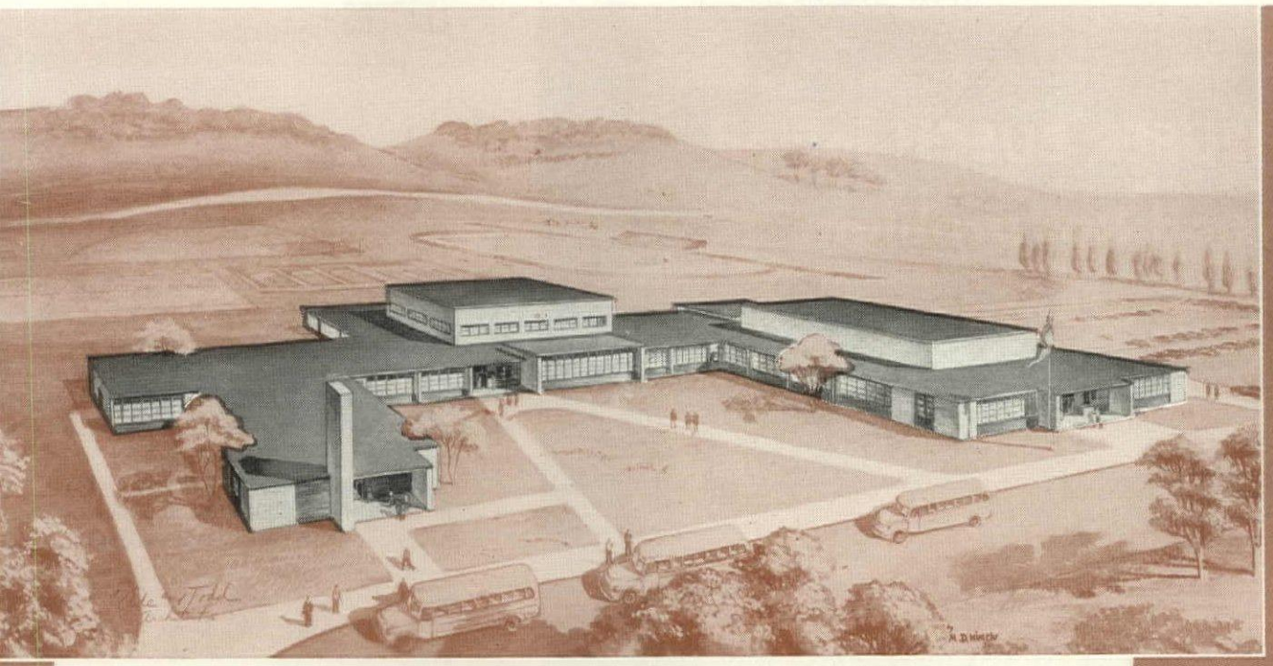
MASTROL System for controlling forced hot water heating



METAFLOW Control Valve



Right: FLOWRITE Neoprene Diaphragm Control Valve

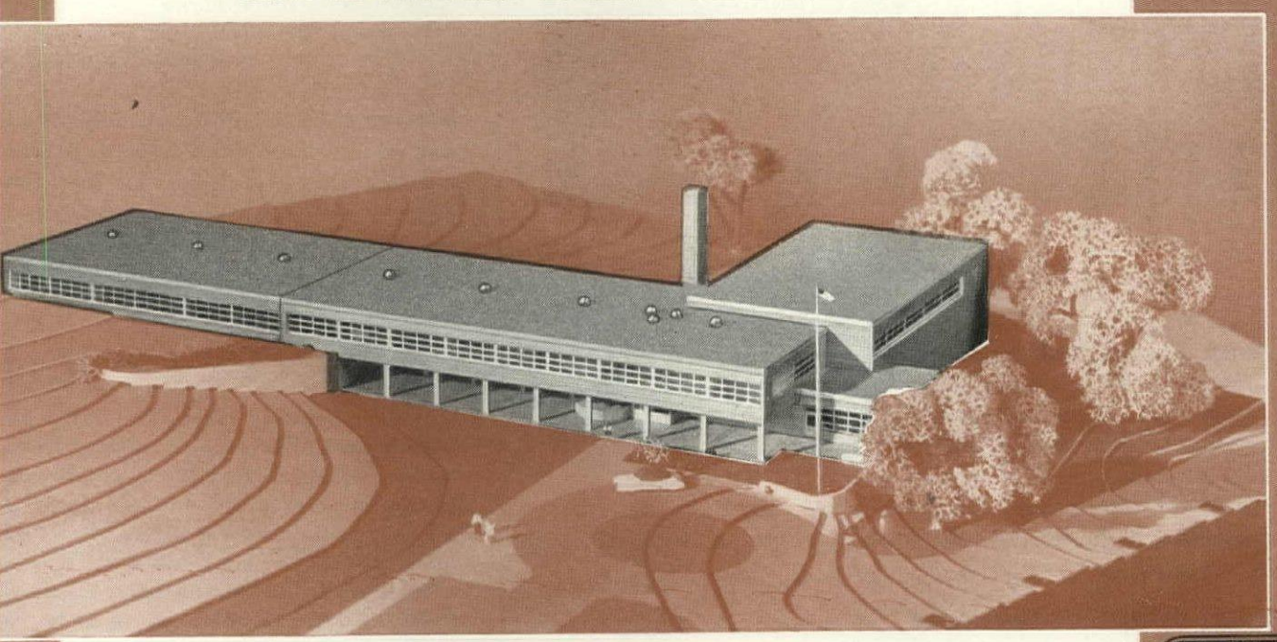


Architects: ADE and TODD
Consulting Engineers: ROBSON & WOESE
Contractor: W. A. McCORMICK

Above: HILTON CENTRAL SCHOOL, HILTON, NEW YORK

POWERS

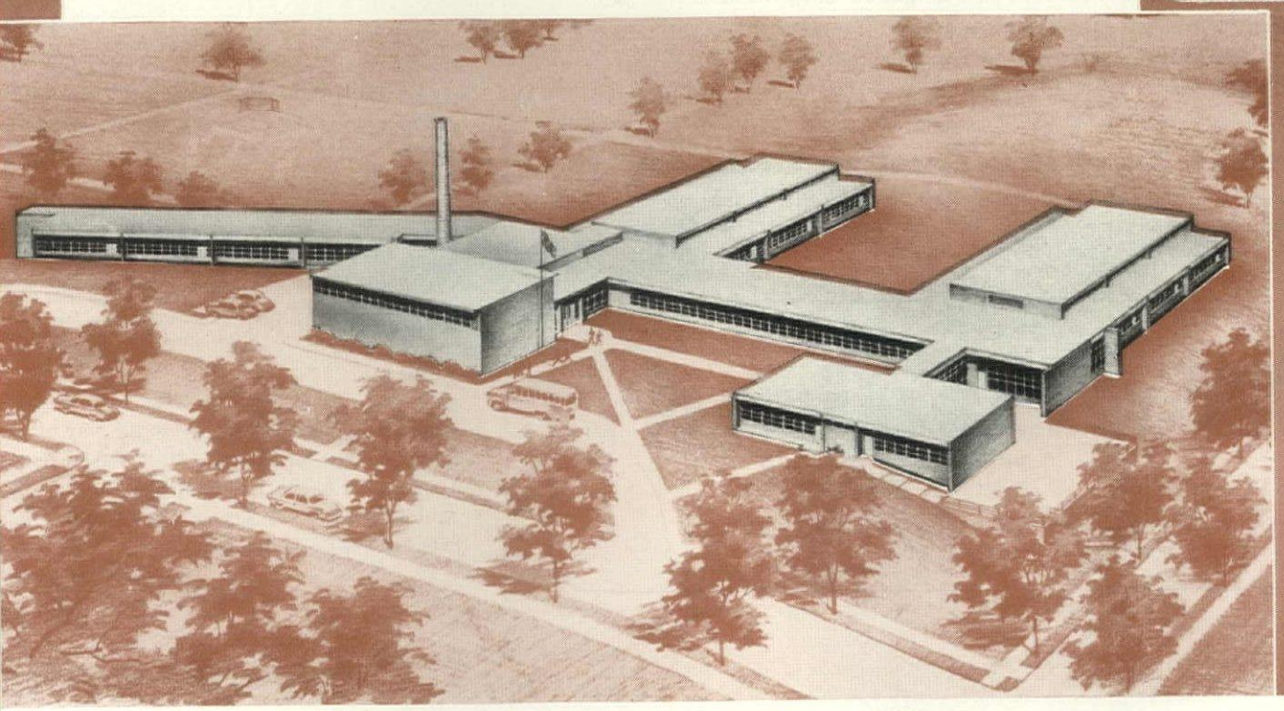
Below: LEE ELEMENTARY SCHOOL, MANHATTAN, KANSAS



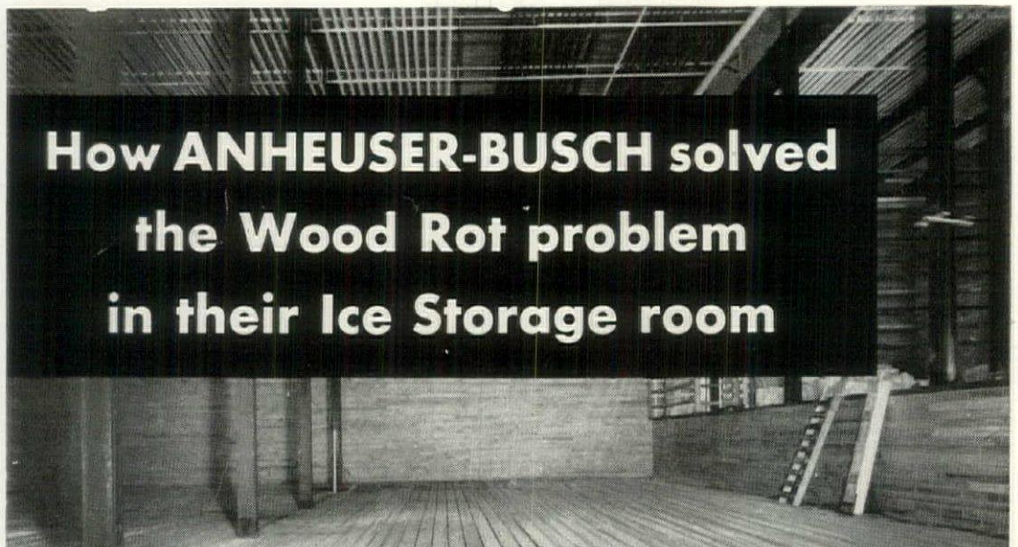
Architects and Engineers
E. O. WOLFENBARGER & ASSOCIATES
Contractor: WOODHULL PLUMBING CO.

—Below: MAUDE ARMITAGE ELEMENTARY SCHOOL, MINNEAPOLIS, MINNESOTA—

POWERS



Architects and Engineers: MAGNEY, TUSLER and SETTER and PERKINS & WILL
Contractor: H. R. NICHOLS PLBG. & HTG. CO.



• In 1937, Anheuser-Busch Incorporated faced a problem common to all companies who operate cold storage rooms. They had to reline an ice storage room with a material which would have the same insulating properties as wood and would resist rotting and deterioration when alternately wet and dry.

So—they lined the entire ice storage room with "Wolmanized"* pressure-treated Southern pine. Now, according to Mr. H. Becke, Plant Refrigeration Engineer, the wood in this ice room is "as good as the day it was put in."

For factory, bridge or residence

The ability of Wolman preservative salts to prevent decay or insect attack makes any lumber last longer in the presence of moisture, heat or termites. There are Wolman preservative treatment plants in all parts of the country. For further information, write:

American Lumber & Treating Company

General Offices: 1601 McCormick Bldg. • Chicago 4, Illinois

Offices: Little Rock, Ark. • Portland, Ore. • Boston • Los Angeles
San Francisco • Baltimore • New York • Jacksonville, Fla.

see our CATALOG in SWEET'S FILE ARCHITECTURAL

WOLMANIZED AL-T

Wolmanized *Reg. U. S. Pat. Off.
PRESSURE TREATED
Lumber**

so detracts materially from the efficiencies o airline operations, resulting in disgruntled pas sengers and higher costs to the carriers due t increased space rentals and handling charges

We note with regret that the article state that a part of the failure to build successfu terminals has resulted from public officials becoming "ill-qualified architectural critics" overnight and from "pressure exerted by the airlines." Obviously the public airport officials and the airlines have a vital concern with sound terminal design and can properly be expected to become architectural critics and to exert pressure if their terminal require ments are not recognized and satisfied. . . .

We are pleased to note that through the medium of the FORUM the best architectural thinking is being focused on these problems and it is our hope that the result will be greater conveniences for the public, lower costs for the communities, more efficiency for the airlines, and new standards and artistic satisfaction for the architects.

R. S. DAMON, *president*
Trans World Airlines, Inc.
New York, N. Y.

● FORUM agrees that airport and airline officials must protect their interests as far as the terminal's functional design is concerned. Too often, however, they also dictate the terminal's architectural appearance, a job for which they are seldom qualified.—Ed.

CHURCHES

Sirs:

It would seem that Frank Lloyd Wright has done it again. The exterior of his new Unitarian Church (AF, Dec. '53) is clearly an invitation to worship. However, upon entering the chapel, I am given the feeling that we are being asked to worship Frank Lloyd Wright.

To my mind, the cleanliness of the Thorshov-Cerny Chapel (AF, Dec. '53) is closer to Godliness.

LYNN GRAHAM
New York, N. Y.

Sirs:

Congratulations for a very inspiring series on churches in the December FORUM. Such an article is most timely when so many congregations are preparing to build.

The photography was especially commendable in the way it captured the spiritual atmosphere of these fine edifices. . . .

JOHN D. PELFER
Dearborn, Mich.

Sirs:

In your December issue you have exactly what I have been looking for in the way of an informal type of church. It is the Warren Memorial Chapel in Monteagle, Tenn. by Architect Edwin A. Keeble. But I cannot locate Monteagle on the map.

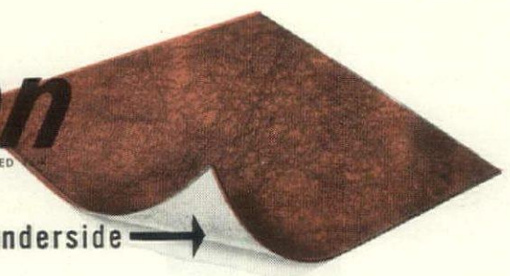
continued on p. 82



Stop worrying about bruised walls !

Kalistron

PAT. APPLIED



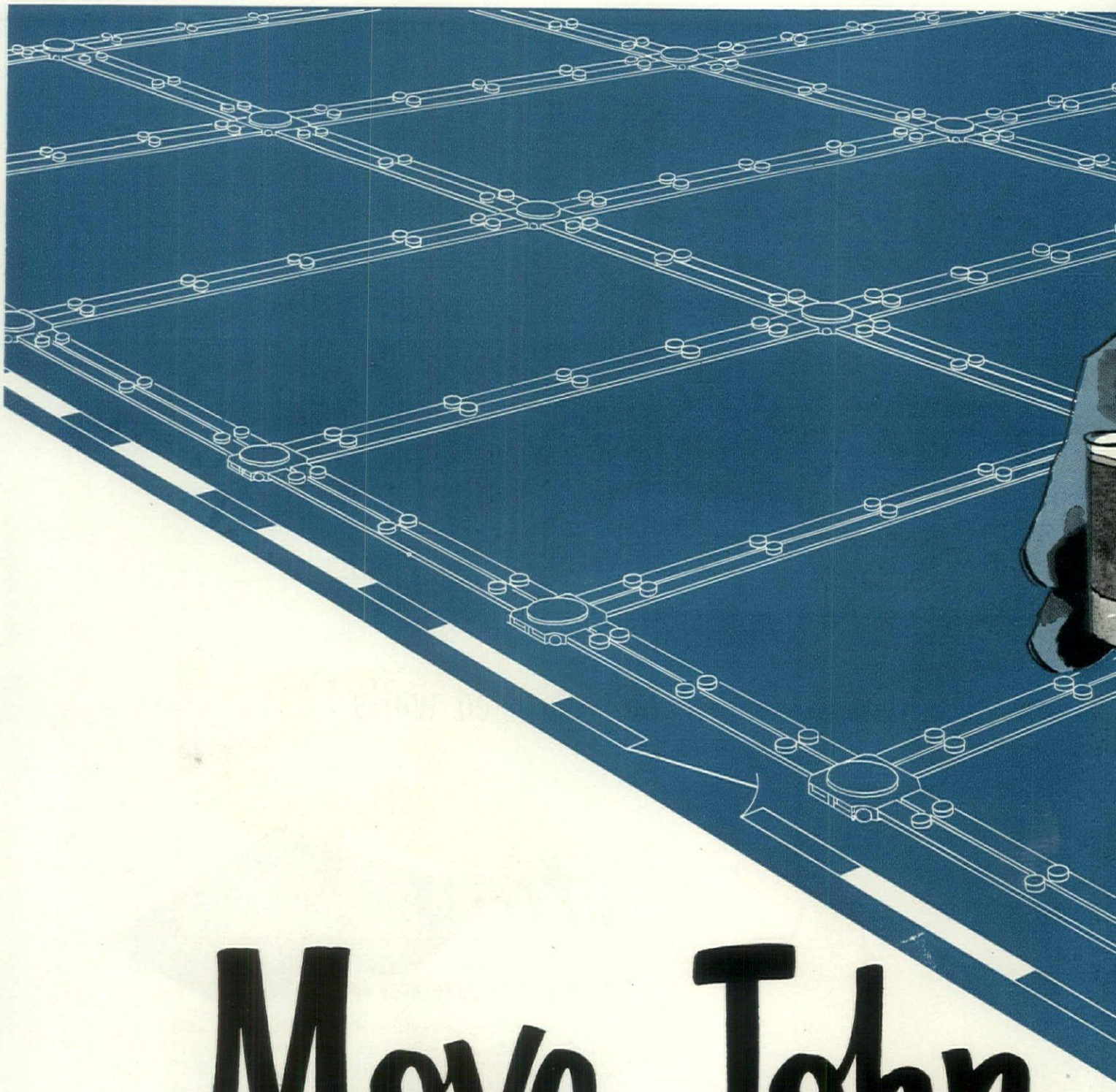
Astounding but true, Kalistron-covered walls, even after years of abuse, don't show ugly bruises or scrapes. Records at leading hospitals, hotels, schools, other heavy-traffic buildings prove it. Miraculous? Here's the secret: Kalistron is different, it's made by fusing color to the *under*side of clear, super-tough plastic sheeting. No surface wear can get at that *under*side color.

Also, that *under*side feature means wonderfully rich color-depth. As a result, Kalistron walls are more beautiful to start with. And that beauty lasts! You get big savings in wall maintenance costs.

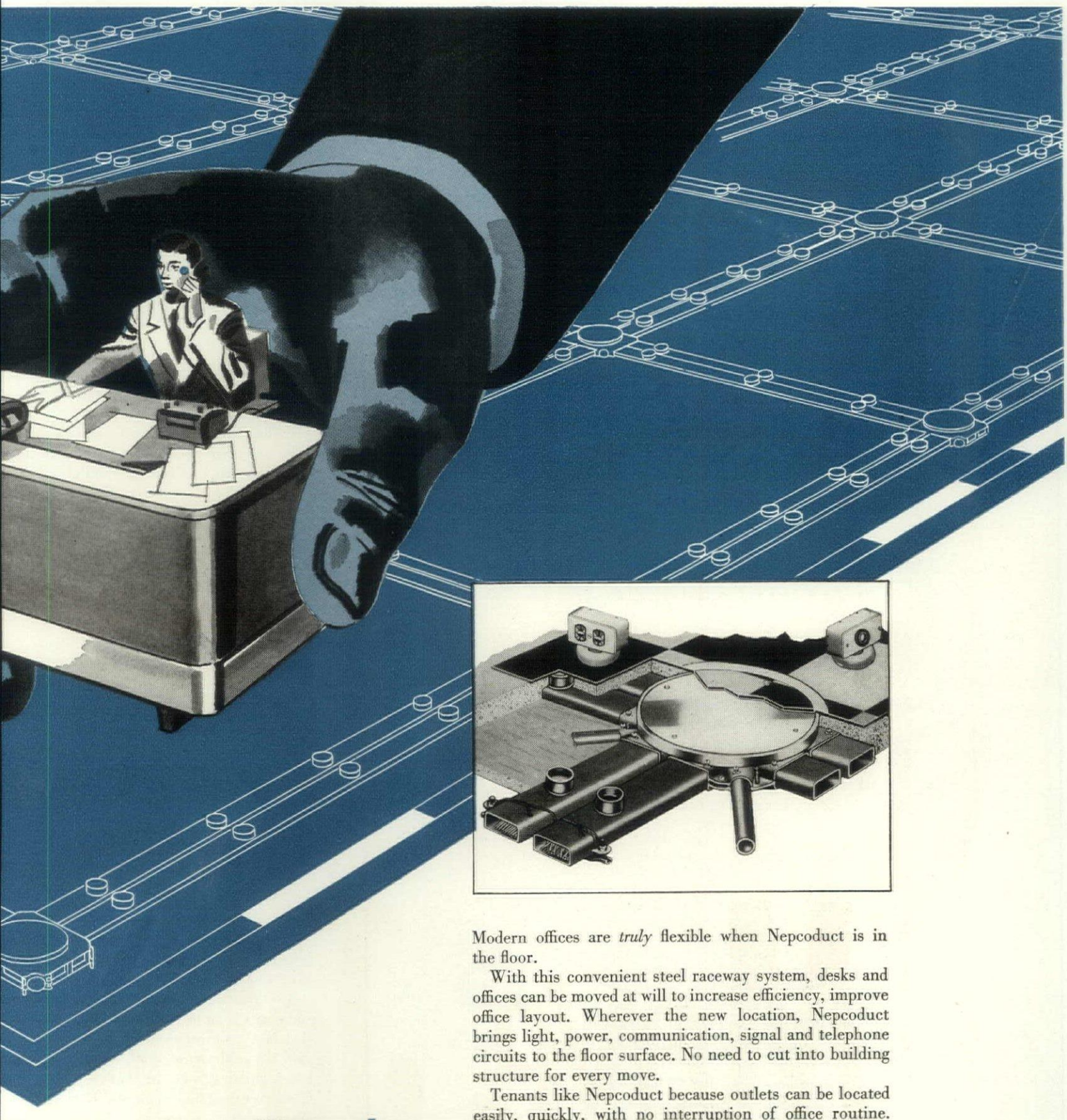
Exceptional also for upholstery, *with 3-way-stretch fabric-backing*. Available in special colors for harmonizing of walls, furniture and decorations.

Write for detailed information.

Address: United States Plywood Corporation, Dept. F-20
55 West 44th Street, New York 36, N. Y.



Move John anywhere...



. . . in buildings with **Nepcoduct** telephone and electric light and power outlets are everywhere!

Modern offices are *truly* flexible when Nepcoduct is in the floor.

With this convenient steel raceway system, desks and offices can be moved at will to increase efficiency, improve office layout. Wherever the new location, Nepcoduct brings light, power, communication, signal and telephone circuits to the floor surface. No need to cut into building structure for every move.

Tenants like Nepcoduct because outlets can be located easily, quickly, with no interruption of office routine. Building owners like the economical maintenance it allows. Architects and builders like its adaptability to any type of building, any type floor construction.

Nepcoduct is the *standard* underfloor wiring system—steel for permanence, grounded for safety.

For life-long flexible wiring, be sure that Nepcoduct is in *your* plans—for new construction or modernization. Write today for the Nepcoduct catalog.

EVERYTHING IN WIRING POINTS TO

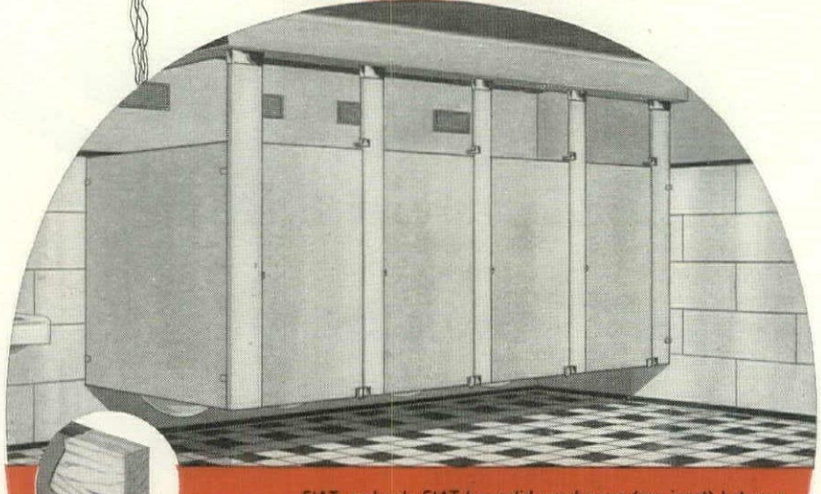
National Electric Products

PITTSBURGH, PA.

3 Plants • 7 Warehouses • 33 Sales Offices

now FIAT offers
a complete new line of
toilet compartments

FIAT engineering has developed
a new type construction that results in
streamlined beauty with increased
strength and durability.



the new Aristo CEILING HUNG COMPARTMENT

FIAT, and only FIAT has solid wood cores (see inset) between two sheets of steel in the pilasters where superior strength is needed. This is an exclusive feature in the Aristo Ceiling Hung and the Aristo Floor Supported Compartments. Other FIAT exclusives are new theft proof screws, concealed type fastenings, and newly designed chrome-plated hardware parts. FIAT compartments are made of the finest stretcher-leveled furniture steel, either cold rolled or bonderized-galvanized. They are finished with a primer coat and two coats of baked-on durable enamel in white or any combination of eight colors, producing a beautiful two-tone effect.

Made by FIAT first in showers

SPECIFY FIAT FOR—
• Price
• Quality
• Appearance
• Adaptability
• Prompt Delivery

SEE SWEET'S 21b Fi ARCHITECTURAL ...or write for our complete NEW CATALOG



Included in the new line are:
Aristo Ceiling Hung Compartments
Aristo Floor Supported Compartments
Duro Flush Type Compartments
Permo Panel Type Compartments
Junior Size Compartments
Hospital Cubicles
Dressing Compartments

FIAT METAL MANUFACTURING COMPANY
THREE COMPLETE PLANTS—ECONOMY · CONVENIENCE · SERVICE



Long Island City 1 New York
Franklin Park, Ill. (Chicago Suburb)
Los Angeles 63 California
In Canada: Porcelain and Metal Products, Ltd. Orillia, Ontario

LETTERS *continued*

How can I contact the church board an especially the architect?

I have scoured the FORUM for two years bu this is what I have been looking for. I com pliment you for your fine work; it is un surpassed.

REV. JIMMY BUCHANA
Asheville, N. C.

● Monteagle is about 80 mi. SE (as the crow flies) of Nashville. Architect Keeble's address i 2000 Glen Echo Rd., Nashville.—Ed.

Sirs:

Your article on FLLW's Unitarian Churc was very interesting, instructive and inspiring Your presentation was excellent.

In the editorial, "Anarchy in Our Churches," why was there no mention of the New Jeru salem Church Lloyd Wright designed? Thi certainly was a great contribution to archi tectural progress.

In regard to the UN buildings, I would lik to ask one question. When is the funeral?

DELTON D. LUDWI
Gardena, N. D.

● Not yet—see below.—ED.

UN DESIGN CRITICISM

Sirs:

While I have no burning desire to engag in the lively discussion of the architecture o the UN General Assembly Building (AF, Dec '52), I think the finished building is terrific A great landmark has been added to ou civilization.

My hat is off to Wally Harrison.

JEDD S. REISNER
Reisner & Urbahn, architect
New York, N. Y.

Sirs:

Have architects in general taken a "hypo critical" oath to divide and defame another man's work?

The December FORUM with its nauseous comments from men of stature in this profes sion is a poor commentary on one's right to give just criticism of another man's work and effort. First it was the Junior Chamber of Commerce building; now the UN. Have we degenerated to a position where we cannot approve any but our own works? It is no wonder that architects are having a tough time with public relations if we agree in sub stance that "there is no good design but my own."

CHARLES E. BOETTCHER, *architect*
Rockford, Ill.

Sirs:

Congratulations on the work of your maga zine, particularly in its role of impartial critic and in the subtlety of its criticisms.

It is especially effective to show the work of some of our biggest architectural salesmen against the work being done in countries where

continued on p. 88

NOW... Wascolite Skydomes framed in *Extruded* ALUMINUM

THE PIONEER PRE-FABRICATED ACRYLIC SKYDOME . . . NOW RESEARCH-IMPROVED FOR GREATER STRENGTH, GREATER BEAUTY, GREATER PERMANENCE, GREATER ECONOMY

FIRST with "the dome that floats in its frame" . . .
FIRST with the protected edge . . .
FIRST with Daylight Engineering Service . . .
NOW FIRST AGAIN with frames of extruded aluminum . . .
for a great advance in performance . . .

AT NO ADVANCE IN PRICE!

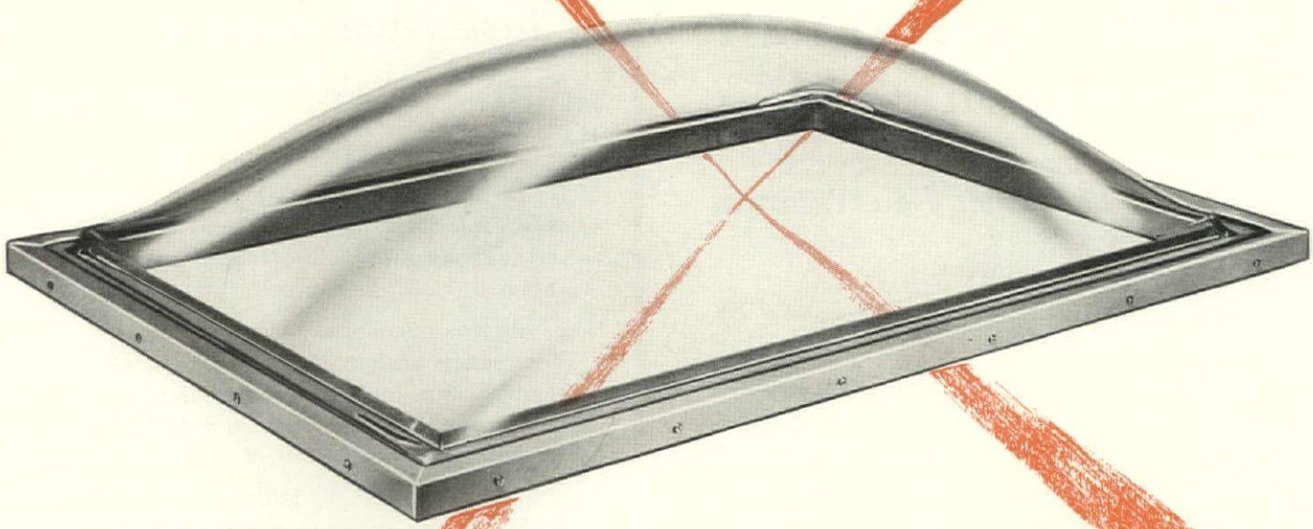
Extruded aluminum shapes .078" thick—4 times as thick as sheet stock. Mitred welded joints. When Wascolite Skydomes go in, maintenance costs go out. Prefabricated Wascolite Skydomes come in 3 basic shapes, 17 sizes, with clear or translucent acrylic domes. Weatherproof, shatter-resistant, they provide a flexible, economical, efficient daylighting system.

AND THE PRICELESS WASCOLITE *EXTRA*

We will prepare a scientific Daylighting Study on your next job without cost or obligation. Send us blueprints and lighting requirements; we will send you specs. and drawings showing size, type, number and spacing of Skydomes for correct balanced illumination.

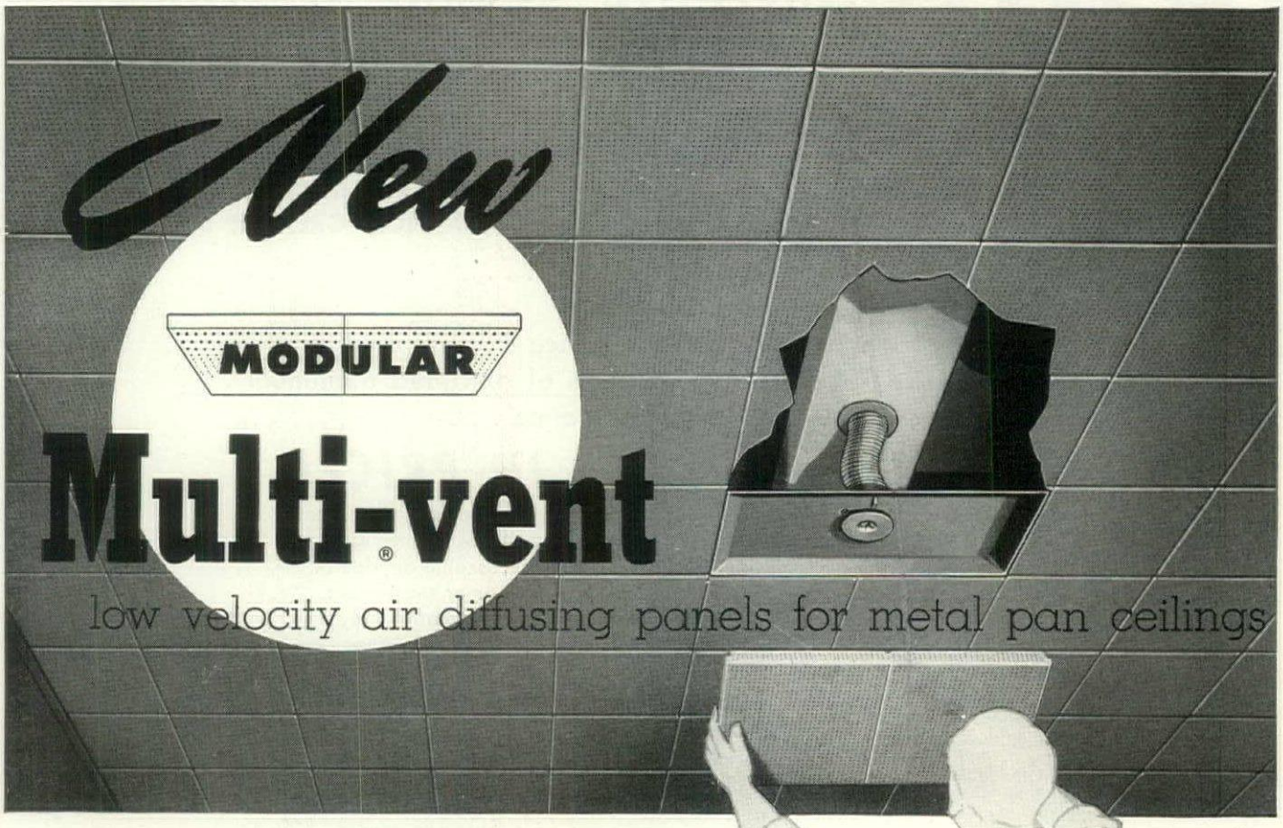
Write for new A.I.A. Folder

WASCO FLASHING COMPANY
89 Fawcett St., Cambridge 38, Mass.



WASCOLITE
SKYDOMES

U. S. PAT. 2610593
Other patents pending



saves
installation dollars

solves
every important air distribution problem

for the *OWNER* • *ARCHITECT* *ENGINEER* • *CONTRACTOR*

- Complete concealment.
- Panel locations determined solely by load considerations.
- Relocation of partitions requires no panel alterations.
- Exceptional uniformity and control of room temperature.
- The highest loads and ventilating requirements handled with a total absence of strong air streams.
- System design, installation, and balancing extremely simple and rapid.

Material and labor saving installation features

1—Shop built duct work installed and system balancing completed prior to and independent of ceiling erection.

2—No additional material, structural work, turndown collars or rigid connections requiring close fitting, sealing or calking are involved.

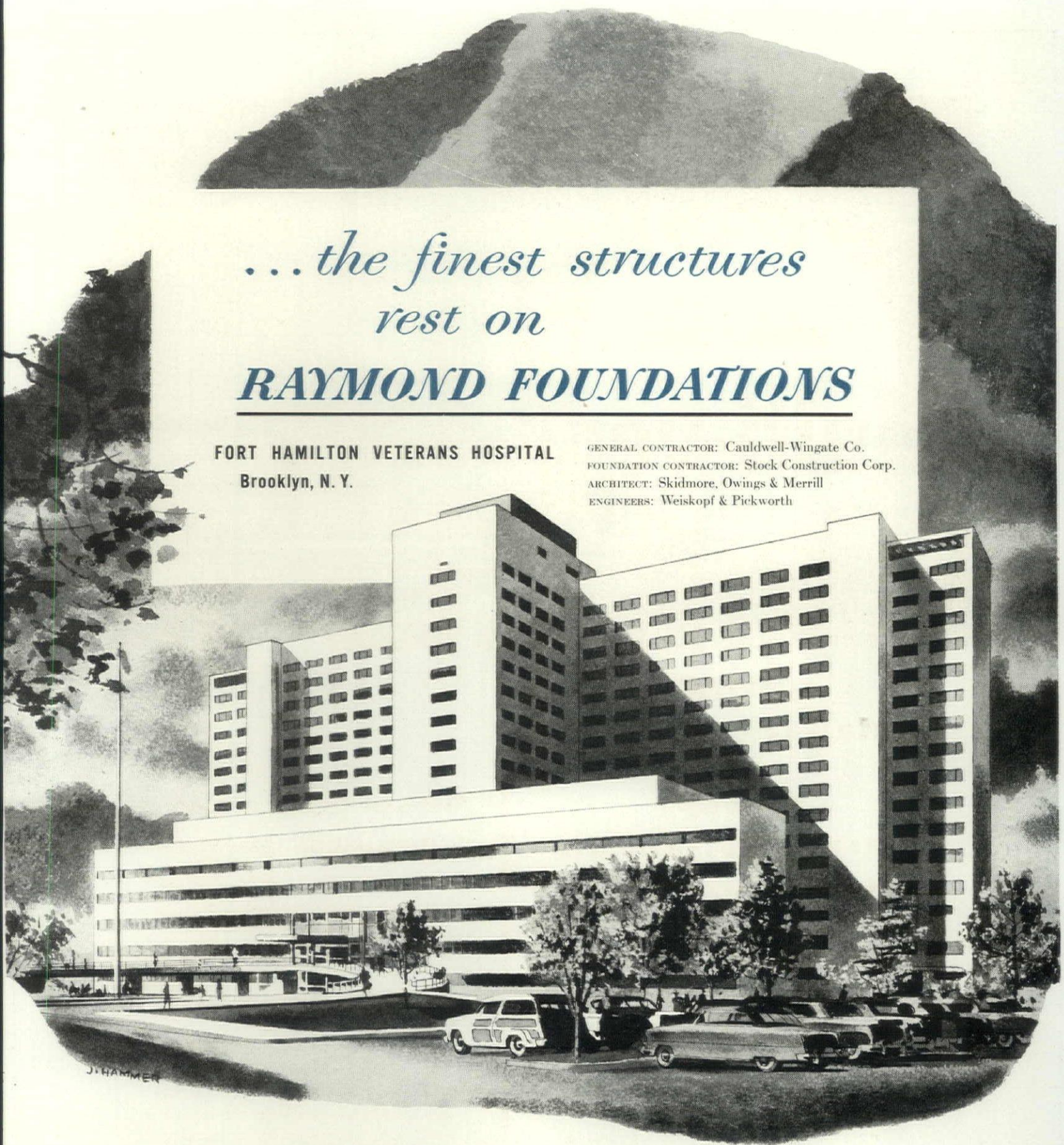
3—All components of Modular Multi-Vent panels are quickly and easily assembled, attached and aligned in the ceiling by hand without the use of tools. No cutting or reshaping of standard ceiling materials is necessary.

4—Existing air distribution systems can be readily and economically converted to Modular Multi-Vent.

Write for bulletin 385 with complete details and specification data.

MULTI-VENT DIVISION

THE PYLE-NATIONAL COMPANY
1376 North Kostner Ave., Chicago 51, Ill.



...the finest structures rest on RAYMOND FOUNDATIONS

FORT HAMILTON VETERANS HOSPITAL
Brooklyn, N. Y.

GENERAL CONTRACTOR: Cauldwell-Wingate Co.
FOUNDATION CONTRACTOR: Stock Construction Corp.
ARCHITECT: Skidmore, Owings & Merrill
ENGINEERS: Weiskopf & Pickworth

Close to four thousand Raymond Standard Piles were used as a foundation for this magnificent new veterans hospital overlooking New York Harbor. This is only one of the many hospitals throughout the country built on Raymond Piles.

RAYMOND
CONCRETE PILE CO.
140 Cedar Street • New York 6, N. Y.
Branch Offices in the Principal Cities of United States and Central and South America

THE SCOPE OF RAYMOND'S ACTIVITIES . . . Foundation Construction . . . Soil Investigations In-Place Pipe Lining . . . Harbor and Waterfront Improvements . . . Specialized Construction



For classrooms, corridors, entrance lobbies, or wherever concentrated traffic demands an extra durable floor, Armstrong's Linotile® is the outstanding choice. Resilient and comfortable underfoot, its dense composition keeps dirt from penetrating its smooth surface. Linotile is the easiest to maintain of all the Armstrong Floors.

Stockton School
East Orange, New Jersey
Emil A. Schmidlin, Architect

ARMSTRONG'S LINOTILE

ARMSTRONG CORK COMPANY • LANCASTER, PENNSYLVANIA

NEW
Anemostat
Selection
Manual 45
features for the first time . . .

duct take-off design data



For the first time data is available to Architects, Engineers and Contractors on static pressure factors for Duct Take-Off Designs. Send for your copy today and save engineering hours and avoid design changes.

ANEMOSTAT®

DRAFTLESS *Aspirating* **AIR DIFFUSERS**

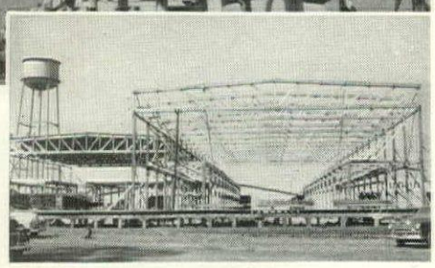
ANEMOSTAT CORPORATION OF AMERICA

10 EAST 39th STREET, NEW YORK 16, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

"No Air Conditioning System Is Better Than Its Air Distribution"





Photographs show how engineered timber construction is used in Crossett's new mill building.

Crossett's New Oak Flooring Mill Demonstrates Efficiency and Economy of Wood Truss Construction

Crossett is taking its own recommendation by using wood construction exclusively in the new Crossett oak flooring mill. Construction shown above adequately meets load specifications—and at a substantial saving.

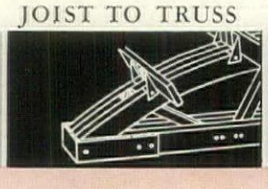
Architects, engineers and contractors find that timbers fit today's needs. Engineered timber construction withstands emergency winds and seismic loads. It resists combustion, free from the hazards of load-bearing collapse under extreme heat. It possesses all the elements essential to *permanent* construction.

Crossett timbers are engineered to specific stress values. Augmented with Teco ring connectors and grids, load bearings provide excess safety factors. Available in untreated, WOLMANIZED* treated and creosoted stock, they qualify under Southern Pine Inspection Bureau standards as well as Federal Specifications MM-L-75lb.

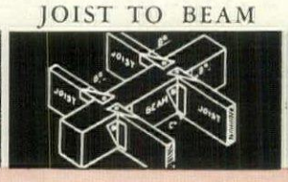
FOR FURTHER DETAILS, write Crossett to obtain specific information regarding your own designing problems. See for yourself how timber construction can answer many of your difficult design and building problems today.

*Trade-mark Reg. U. S. Pat. Off.

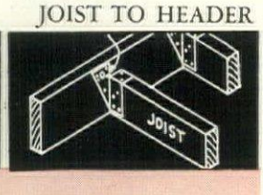
JOIST TO TRUSS



JOIST TO BEAM



JOIST TO HEADER



CROSSETT LUMBER COMPANY

CROSSETT, ARKANSAS

LETTERS *continued*

architecture is not self-conscious and has vitality; and to provide space for their frightful struggles with the English language in the attempt to explain in words what their buildings do not say; and to show them, being rebels without a cause, finding it necessary to invert universal fundamentals for effects.

BERNARD HEATHERLEY, *architect*
Penfield, N. Y.

Sirs:

I have no business spending my Sundays writing letters to the editors of the FORUM, but you are doing a swell job and I want to support you, at least, in keeping this issue before the profession. I only hope that Wallace Harrison can take it. Is this sort of criticism limited to his UN buildings, or can we find some strictly domestic subjects for it?

Googy International may be explained, as the FORUM has so tactfully done, but it can hardly be justified as the expression of "hidden impluses that motivate the people." The subject is indeed worth thinking about. What people and what impulses? Certainly there are today many international impluses such as the urge for freedom and the longing for a dramatic relief from mechanization and drudgery. But is it the role of the architect to interpret the urge for freedom by monumental disunity in forms? If one shock is dramatic, can a series of unrelated shocks produce a drama? Or even a good show?

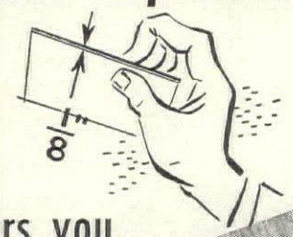
It is a little pathetic to see the frantic effort being made by exponents of the international box to disclaim kinship with this new and "fluid" version of their family. Legitimate or not, it is still their baby and can hardly be passed off as "new empiricism" or "popular baroque" in spite of its obvious deviation tendencies.

The FORUM raises a moral question: since the Old Guard seek to stop the new international UNESCO building in Paris—which they link to the UN in New York—would it not therefore be wise and prudent for contemporary American architects to support, or at least not criticize, the New York example for fear of hurting the cause of contemporary architecture? I don't think so. There is another course which would a) make our critical standards better understood by the public, and b) recognize, after some 25 yrs. of experience, the limitations of a so-called international architecture in either France or USA. Someday, when there is far more unity among peoples than exists today, we may have an international way of building, but with strong regional variants. In the meantime, haven't we learned enough to focus our attention on the regional variants and to design in a contemporary way for the people who must live with our buildings?

BUFORD PICKENS, *director*
School of Architecture
Tulane University
New Orleans, La.

for Beautiful, Maintenance-Free Walls and Top Surfaces...

LAMIDALL



The 1/8" THICK GENUINE PLASTIC LAMINATE offers you

3 MONEY-SAVING ADVANTAGES

1. Low Initial Cost...

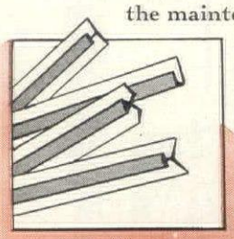
Woodall's unique, continuous production process brings this genuine plastic laminate to you below the cost of ordinary plastic laminates. Lamidall's low cost allows its use in every type of construction . . . institutions, commercial buildings, retail stores, hotels, apartments and homes. The complete choice of beautiful, "life-like" wood grains and colorful, decorative patterns opens up unlimited new decorative possibilities for both walls and top surfaces.

2. Easy and Economical to Apply...

the 1/8" structural thickness of Lamidall in panels up to 4'x12' in size makes on-the-job cutting and application simple. Lamidall can be applied over surfaces too rough for the thinner plastic laminates. This means a substantial savings in construction and finishing costs.

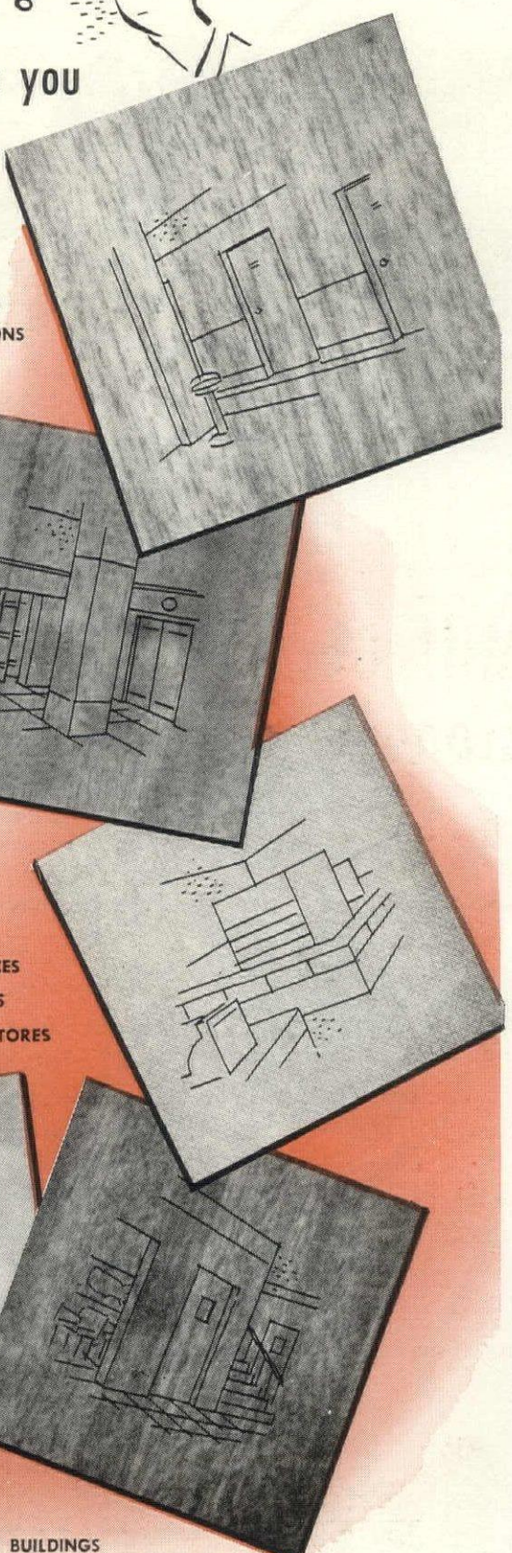
3. Maintenance Practically Eliminated...

the tough, glass-like surface of Lamidall resists heat, stains and abuse. It doesn't chip, crack or peel—it is unaffected by boiling water, soap, beverages, fruit juices, alcohol and common solvents. An occasional wiping with a damp cloth is all the maintenance it ever needs.



NEW MATCHING MOULDINGS—for the Beauty of Continuous Wall Surfaces!

Now you can get extruded aluminum mouldings that have the same tough plastic surface, the same beautiful woodgrains, patterns and colors as Lamidall. They blend so perfectly that you have the effect of a continuous, unbroken wall surface.



Lamidall is a product of

WOODALL INDUSTRIES INC.

DETROIT 34, MICHIGAN

Address Inquiries to Woodall Chicago Plant, 3508 Oakton St., Skokie, Ill., where Lamidall is produced.

Other Woodall Plants: Cleveland • Laurel, Miss. • Mineola, N.Y. • Monroe, Mich. • San Francisco

See and Test

FREE SAMPLES OF LAMIDALL!

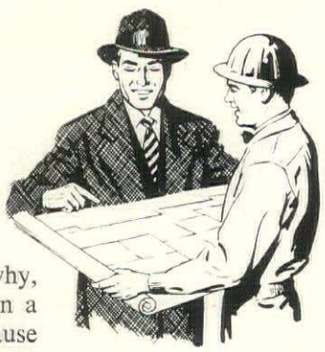
You must see this remarkable new plastic laminate to appreciate its beauty and workability . . . we'll be glad to send you free samples and full-color technical literature. Write TODAY!

Everybody Benefits WITH Permalite



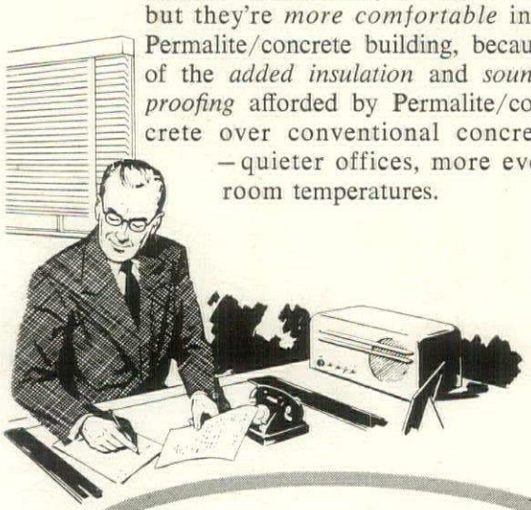
ARCHITECT– Permalite/concrete takes the handcuffs off the architect with its *light weight*—1/7 to 1/2 the weight of conventional concrete. Freed from this dead load, the architect has greater freedom in designing for required strength with minimum steel requirements.

—AS THE AGGREGATE IN CONCRETE, FOR INSTANCE

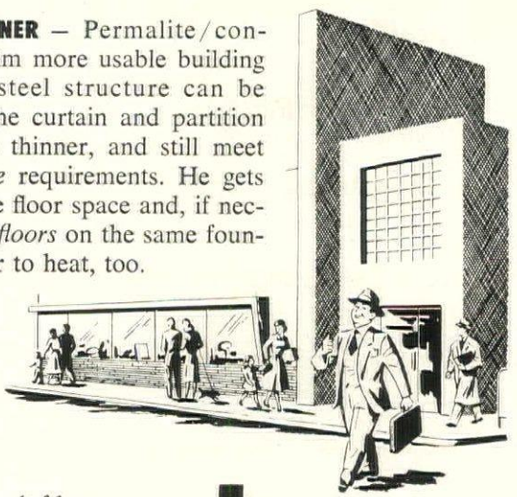


BUILDER– Permalite/concrete takes a lot of weight off the builder's mind, too. *Lighter,* it's easier and quicker to handle, speeds construction. Advantages over other aggregates in the same weight class—uses less water, *shrinks less* on drying, resists thawing and freezing, has *lower absorption.*

TENANT– Tenants may not know why, but they're *more comfortable* in a Permalite/concrete building, because of the *added insulation* and *soundproofing* afforded by Permalite/concrete over conventional concrete—quieter offices, more even room temperatures.



BUILDING OWNER – Permalite/concrete gives him more usable building space. The steel structure can be lighter and the curtain and partition walls can be thinner, and still meet *fire-resistance* requirements. He gets more rentable floor space and, if necessary, *more floors* on the same foundation. Easier to heat, too.



To get the full story on Permalite's many advantages, send today for your free bulletin on Permalite, the largest-selling perlite aggregate in the world. Write Great Lakes Carbon Corporation, Dept. H-332—612 So. Flower St., Los Angeles 17.

Dependable GREAT LAKES **Permalite**®

THE LARGEST-SELLING PERLITE AGGREGATE IN THE WORLD

PROCESSED FROM SOCORRO PERLITE ONLY BY THESE EXCLUSIVE PERMALITE LICENSEES OF GREAT LAKES CARBON CORPORATION

Indoken Perlite Company, Cincinnati 17, Ohio
•
Perlite Products Corp., Dallas, Texas

William J. McCormack Sand Co., Inc., New York, New York
•
Pennsylvania Perlite Corp., Allentown, Pennsylvania

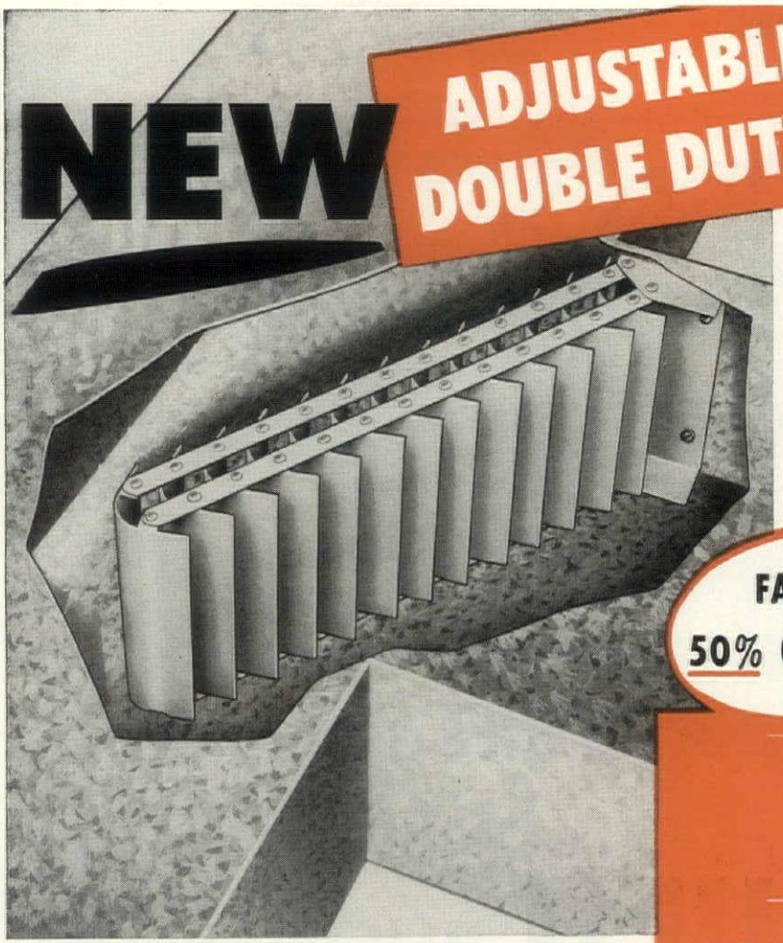
Airlite Processing Corp. of Fla., Scottsburg, Indiana
•
New Jersey Perlite Corp., Newark, New Jersey

MacArthur Company, St. Paul 4, Minn.
•
McClure & Erickson Corp., Los Angeles, California

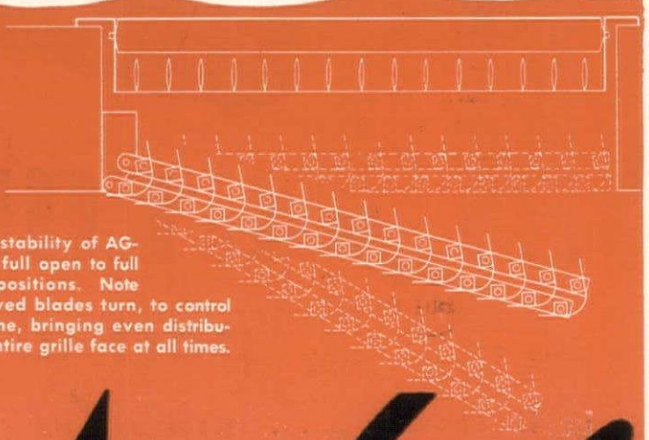
Perma-Rock Products, Inc., Baltimore 30, Maryland
•
West Indies Perlite Mfg. Co., Inc., Havana, Cuba

The Whittemore Company, Roslindale 31, Mass.
•
Virginia Perlite Corp., Hopewell, Virginia

NEW ADJUSTABLE DOUBLE DUTY AIR VOLUME EXTRACTOR & CONTROLLER



FACTORY ASSEMBLY SAVES UP TO 50% OVER SLOW HAND-MADE METHODS



See adjustability of AG-45 from full open to full closed positions. Note how curved blades turn, to control air volume, bringing even distribution to entire grille face at all times.

11 TREMENDOUS ADVANTAGES:

1	FACTORY ASSEMBLED
2	INSTALLS WITH 2 SCREWS
3	Double Duty Extractor & Vol. Controller
4	Replaces Extra Vol. Controller
5	Equalizes Air Distribution & Air Flow
6	Turns Air from Main Duct
7	Reduces Pressure Losses
8	Stops Excess Turbulence
9	Low Cost
10	Rattle Free
11	14 & 20 Gauge Steel

Air Foil
AIR CONDITIONING OUTLETS

Slash unit costs with this amazing new Titus AG-45. Make it easy for yourself to *keep bids low.* Use this *cost saver* to beat competition. Eliminate the extra work of putting in volume controllers. Save time, labor. IMPROVE THE AIR CONTROL EFFICIENCY OF EVERY INSTALLATION. Get complete free information now. Order a sample AG-45 today. Remember, not until you have one of these AG-45s in your hand, can you see its *amazing cost-saving value.* IMMEDIATE DELIVERY.

Free



Check Type of Grille on Which Information Is Desired:

- ☐ Air conditioning outlets
- ☐ Return air grilles and registers
- ☐ Volume controllers
- ☐ Perforated metal and ornamental grilles
- ☐ Industrial grilles
- ☐ Special made-to-order grilles.

TITUS MANUFACTURING CORP., WATERLOO, IOWA

- ☐ RUSH information on AG-45 Extractor & Controller
- ☐ Send complete catalog
- ☐ Send literature on above checked items

NAME _____

ADDRESS _____

CITY _____ STATE ____

for Built-in Efficiency...



.... Make COUCH PHONES part of the plan

in Hospitals . . . Institutions . . . Offices . . . Industrial Plants

Leading architects are showing their clients how Couch privately owned inter-office phone systems increase the efficiency of personnel and cut phone bills. Whatever the building, whatever the business, Couch Phones offer these specific advantages:

- Direct contact between key personnel . . . free from the delays of over-worked phone operators.
- Conference circuits limited only by the number of instruments installed.
- Privacy and quiet.
- Operation independent of the switchboard, leaving lines open for incoming calls.
- Lower phone bills by replacing sub stations where outside calls are not essential, and eliminating time-consuming non-business outside calls.

Write today for Bulletin 211 describing Couch Phone Systems and their application.

Simplified Systems of Communication

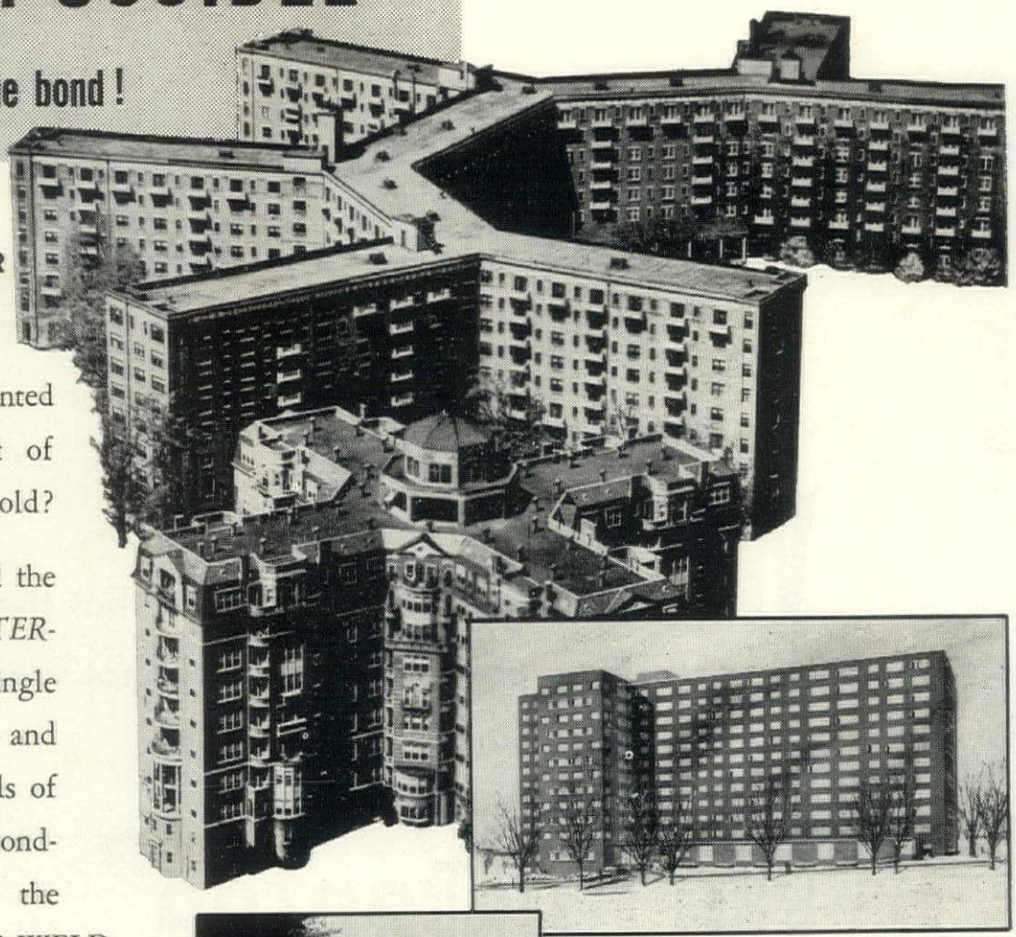
S. H. Couch Company, Inc.

Private telephones for home and office . . . hospital signaling systems . . . apartment house telephones and mail boxes . . . fire alarm systems for industrial plants and public buildings.

NORTH QUINCY 71, MASSACHUSETTS, U. S. A.

WASHINGTON'S FAMOUS WARDMAN PARK DOES THE IMPOSSIBLE

with PLASTER-WELD as the bond!

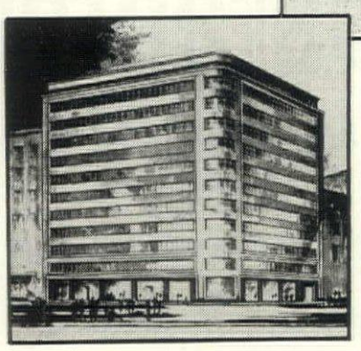


PUTS SKIM FINISH COAT OF PLASTER OVER OLD KRAFTEX WALLS

Imagine trying to modernize old painted Kraftex walls with just a skim-coat of plaster — and expecting it to hold?

Impossible? Of course! Unless, as did the Wardman Park Hotel, you *use PLASTER-WELD as the bonding agent.* A single wing of the hotel was done as a test — and watched for a year. Now all the walls of this huge hotel are being re-done — bonding the finish coat of plaster to the oft-painted old walls with PLASTER-WELD.

It will hold . . . because NO PLASTER-WELD bond has ever let go! This amazing liquid *forever bonds* gypsum or acoustical plaster to *any surface* . . . damp, dry, hot, cold, rough, smooth . . . concrete, cinder block, glass, metal, wood, tile, brick, hardboard, plaster, sheetrock. You apply PLASTER-WELD with brush, roller, or spraygun, covering 500 to 800 sq. ft. per gallon. Then — in 40 minutes or whenever after you like — you put on your plaster. You'll have a bond stronger than the materials it bonds . . . a bond that will never let go!



▲ IN THE NEW SKYLINE APARTMENTS, an FHA project in Syracuse, N. Y.— PLASTER-WELD bonds finish plaster directly to concrete ceilings and columns.

◀ ACOUSTICAL PLASTER is bonded to concrete ceiling with PLASTER-WELD in The 1001 Connecticut Avenue Building, Washington, D. C.

PLASTER-WELD will save time, labor, money, trouble - on new construction, alterations, repairwork. Write for bulletins and nearest distributor.

PLASTER-WELD

PERMANENTLY BONDS PLASTER TO ANYTHING

LARSEN PRODUCTS CORP.

ELM ST., BETHESDA, MARYLAND

We Guarantee Weldwood® Fire Doors and Weldwood Stay-Strate Doors *unqualifiedly* FOR LIFE either as Interior or Exterior doors!*

We Guarantee that the doors, if properly installed, will not warp, bind or stick in summer.

We Guarantee that the doors will not shrink or rattle in winter.

And if any Weldwood Stay-Strate or Fire Door should fail to come up to these standards,

We Guarantee to replace it without charge...including all labor costs involved.

*Weldwood Fire Doors carry the Underwriters' Laboratories Class B and C labels for interior use.

Some of the Famous Users of Weldwood Fire Doors and Weldwood Stay-Strate Doors

LEVER HOUSE
New York City

LEVITT & SONS
Levittown, N. Y. and Pa.

UNIVERSITY OF MIAMI
Miami, Fla.

BELLEVUE HOSPITAL
New York City

SPARKS MEMORIAL HOSP.
Fort Smith, Ark.

ARMISTEAD GARDENS
SCHOOL, Baltimore, Md.

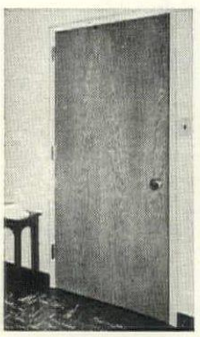
STANISLAUS CITY HOSP.
Glendale, Calif.

CHERRY HILL PROJECT
Baltimore, Md.

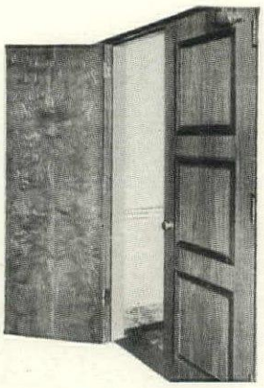
PRESBYTERIAN HOSPITAL
New York City

488 MADISON AVENUE
New York City

CROWN IRON WORKS
St. Paul, Minn.



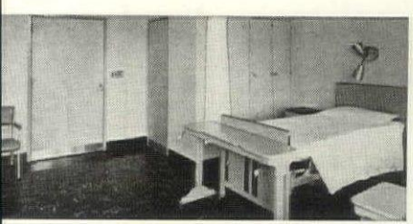
One of the 31 beautiful Weldwood Fire Doors in the new wing of the Union Theological Seminary, New York City. *Architects:* Collens, Willis and Beckonert.



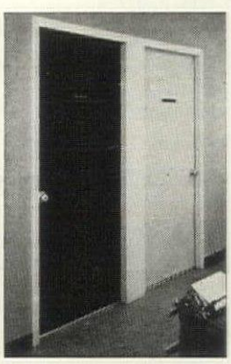
These Weldwood Stay-Strate Doors, in the Fitkin Memorial Hospital, Asbury Park, N. J., combine birch faces on one side with walnut faces on the other. The addition of walnut moldings was all that was necessary to give traditional paneled effect. *Architects:* Ferrenz & Taylor.

You are always Safe When You Specify

Weldwood Fire Doors and Stay-Strate Doors



ldwood "Stay-Strate" flush door with fire re-dant panels of matched birch in natural finish in eenwich Hospital, Greenwich, Conn. *Architects:* idmore, Owings & Merrill.



Lever House, New York City, combines *safety* and *beauty* with Weldwood Fire Doors. *Architects:* Skidmore, Owings & Merrill.

The Weldwood Fire Door gives you the protection of the Underwriters' Laboratories Class "B" and "C" Labels, together with the striking beauty of fine hardwood face veneers.

It provides maximum durability, dimensional stability, resistance to vermin and decay, low initial and maintenance costs.

The Weldwood Stay-Strate Door is available in the same wide range of beautiful hardwood faces as the Weldwood Fire Door . . . and offers the same advantages except that the edge banding is not fireproofed. It is widely specified for unclassified openings as the perfect complement to the Weldwood Fire Door.

Yes, the Weldwood Fire Door and the Weldwood Stay-Strate Door make a beautiful team for safety! Send for complete information about both of these Weldwood doors — and remember that *guarantee* that goes with each of them.

Patent No. 2593050

WELDWOOD® FLUSH DOORS

Manufactured and distributed by

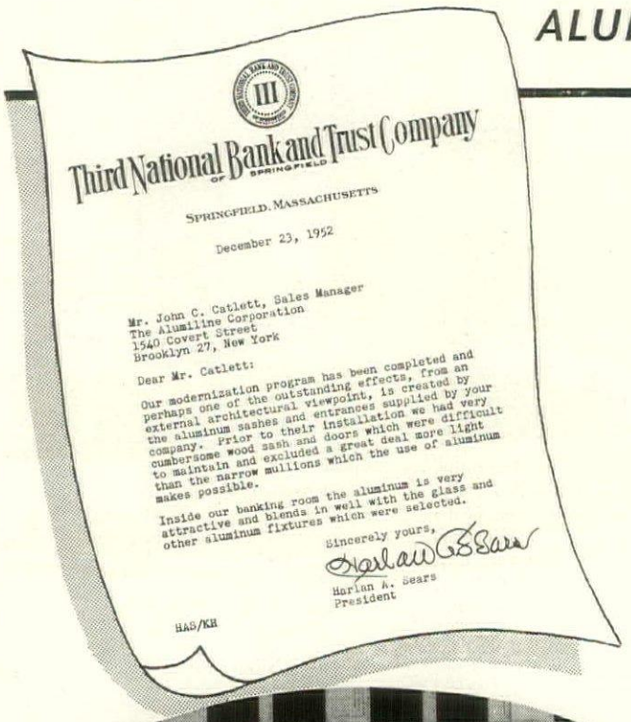
UNITED STATES PLYWOOD CORPORATION

World's Largest Plywood Organization

55 West 44th Street, New York 36, N. Y.

Branches in Principal Cities • Distributing Units in Chief Trading Areas
Dealers Everywhere

ALUMILINE *EXTRUDED ALUMILITED ALUMINUM PRODUCTS*



Third National Bank and Trust Company
OF SPRINGFIELD

SPRINGFIELD, MASSACHUSETTS

December 23, 1952

Mr. John C. Catlett, Sales Manager
The Alumiline Corporation
1540 Covert Street
Brooklyn 27, New York

Dear Mr. Catlett:

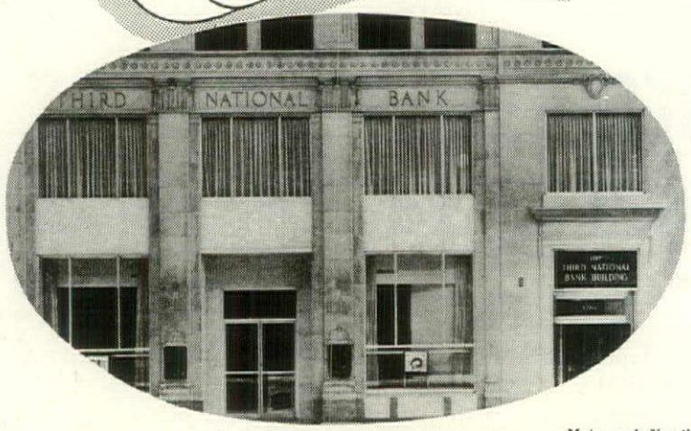
Our modernization program has been completed and perhaps one of the outstanding effects, from an external architectural viewpoint, is created by the aluminum sashes and entrances supplied by your company. Prior to their installation we had very cumbersome wood sash and doors which were difficult to maintain and excluded a great deal more light than the narrow mullions which the use of aluminum makes possible.

Inside our banking room the aluminum is very attractive and blends in well with the glass and other aluminum fixtures which were selected.

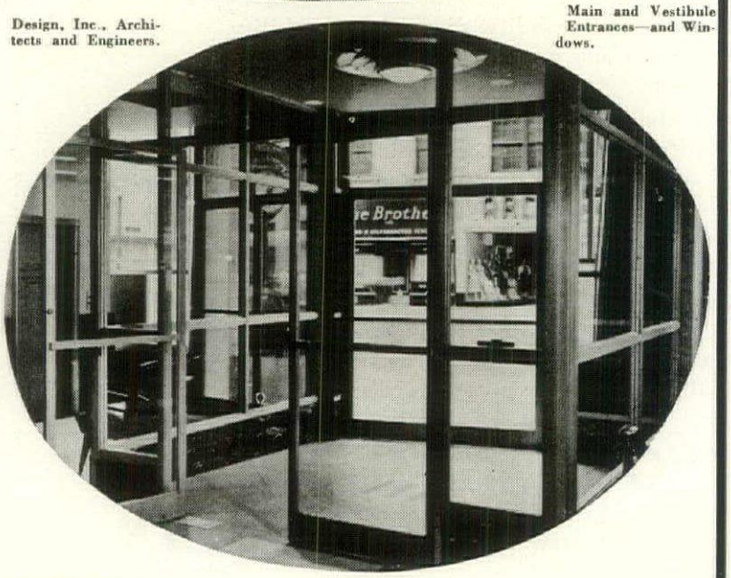
Sincerely yours,

Harlan A. Sears
President

HAS/KH



Design, Inc., Architects and Engineers.



Main and Vestibule Entrances—and Windows.

SEE OUR CATALOG IN SWEET'S

THE ALUMILINE CORPORATION

1540 Covert Street Brooklyn 27, New York

Specified by Leading Architects for

HOSPITALS - SCHOOLS

RELIGIOUS BUILDINGS

BANKS - STORE FRONTS

OFFICE BUILDINGS

HOUSING PROJECTS

SHOPPING CENTERS

INDUSTRIAL PLANTS

- **Extruded Aluminum Store Front Construction**
- **Extruded Aluminum Factory Assembled Entrance Frames**
- **Narrow and Wide Stile Extruded Aluminum Doors**
- **Custom Built Extruded Aluminum Windows**

Sold and installed by Glass Distributors and Dealers throughout the U. S., Canada and other Countries.

The natural beauty of Alumiline designs is *enhanced and preserved* by our corrosion-resistant Alumilited all-weather finish, electrolytically applied at the factory . . . helps protect from scratches and marring.

The Alumiline Corporation, Dept. M
1540 Covert St., Brooklyn 27, N. Y.

Please send us, without obligation, copies of your new 1953 Catalogs as follows:

☐ "ALUMILINE" Store Front Construction (A-53)
☐ "EXTRUD-A-LINE" Entrances (D-53)

Firm .....

By .....

Address .....

City ..... *State* .....



Wood County Hospital, Bowling Green, Ohio.
Strong, Strong & Strong,
Lima, Ohio, Architects.
Steinle-Wolfe, Fremont, Ohio, Contractors

Wood County Hospital...

where Truscon "O-T" Steel Joists Make Floors Light and Fire-Resistant

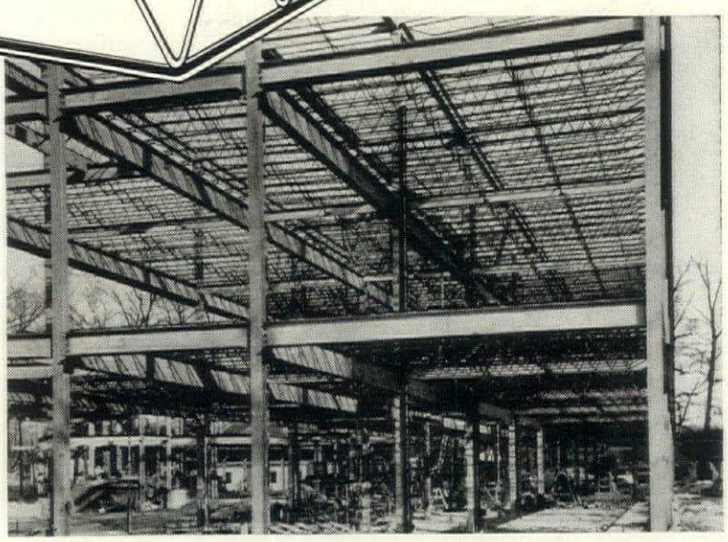


Light? Yes. The light weight of Truscon "O-T" Steel Joist construction lessens time and labor required for erection. It saves materials in supporting framework and foundations.

Strong, too. Wide, specially-formed top and bottom chord members impart stiffness, and keep joists true to line. Continuous steel web member is electrically welded to the chords.

Fire-resistant? Yes. Tests prove that ¾-inch of cement or gypsum ceiling plaster on metal lath protects Truscon "O-T" Open Truss Steel Joist construction against high temperatures. In fact, the majority of insurance rating bureaus recognize the merits of this construction and give it a first-class fireproof classification.

Investigate this lower-cost-per-square-foot construction that assures adequate strength and safety. See Sweet's for complete specifications on Truscon "O-T" Steel Joists. Write us for literature describing the complete line of Truscon Steel Building Products.



Truscon "O-T" Steel Joist construction for floors and roof. Underslung design of the bearing means maximum headroom under supporting girders. Open web allows passage of pipes and conduit in any direction.

TRUSCON STEEL DIVISION
REPUBLIC STEEL CORPORATION
1102 ALBERT STREET, YOUNGSTOWN 1, OHIO

TRUSCON MARK OF MERIT PRODUCTS

TRUSCON® a name you can **build** on

When you wall out weather...

WHY WALL OUT LIGHT, SUNSHINE AND VIEW?

Since man first built shelter, most walls have served but one purpose: protection from the elements—wind, rain, snow, heat and cold. To admit daylight and provide a peek at the outdoors, small windows were put in.

Today walls provide a great deal more than that in comfort and enjoyment when constructed of *Thermopane** insulating glass. Besides protection from weather, *Thermopane* endows your building with abundant natural daylight, sunshine, a horizon-wide view and a sense of spaciousness, even in small rooms.

A *Thermopane* Daylight Wall made of two panes of ¼" plate glass with ½" of dehydrated air hermetically sealed between has a U value of .58. This insulation reduces construction costs by permitting smaller heating and air-conditioning units. It also reduces their operating costs year after year.

Here's another plus value: *Thermopane* cuts down noise from outdoors. It excludes 44% more than single panes do.

The Wilmette Public Library (upper right) is an excellent example of a Daylight Wall insulated by *Thermopane.* The clear glass is used from sill all the way to the ceiling and from wall to wall. This design admits maximum light. The lines of the ceiling continue unbroken into the outdoors, creating a sense of spaciousness.

So why have little windows—holes in the wall—when you can have a *whole* wall that provides protection from the elements plus the pleasures of open living?

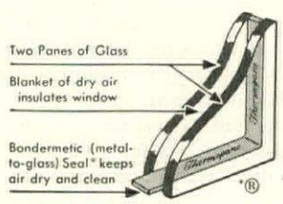
When you compare the cost of a Daylight Wall with a conventional wall, consider the relative cost of erection, the cost of interior finishing and decoration, the ease of ventilating near the ceiling and at the sill. But there is no comparing the pleasure people get from Daylight Walls. That value goes on and on as long as your building stands, beyond measure and without price. *®

L-O-F GLASS PLASKON FIBER-GLASS

THERMOPANE • PLATE GLASS • WINDOW GLASS

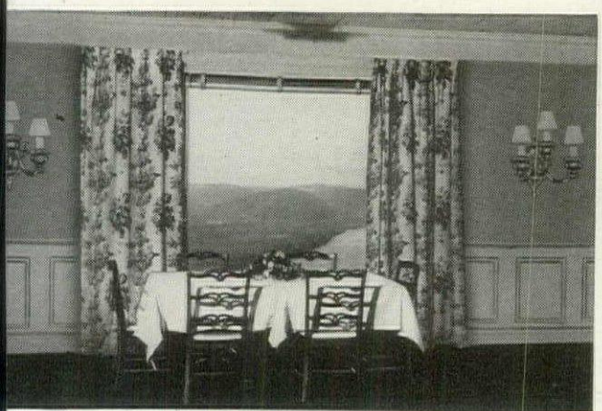
DAYLIGHT WALLS

. . . that don't obscure vision

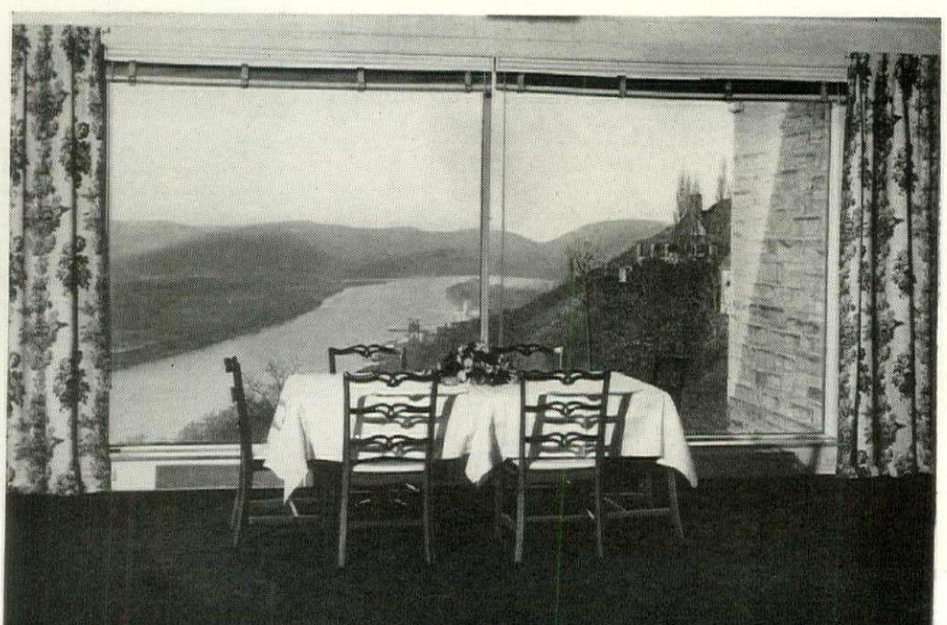


OTHER L-O-F GLASS PRODUCTS: HEAT ABSORBING PLATE • VITROLITE* • SAFETY GLASS • E-Z-EYE SAFETY PLATE • TUF-FLEX* PLATE & DOORS • FIBER GLASS

or the Williams Country Club at Weirton, West Virginia, the esigners chose *Thermopane* walls for comfort in summer and inter, for light, sunshine and view the year 'round.

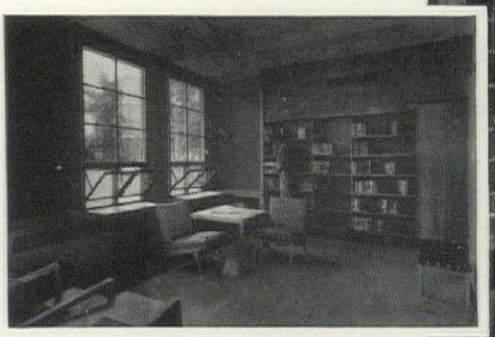


uld there have been any advantage in walling out the light, shine and view like this?



Architects Holabird & Root & Burgee of Chicago, used *Thermopane* Daylight Walls for the Wilmette Public Library, Wilmette, Illinois.

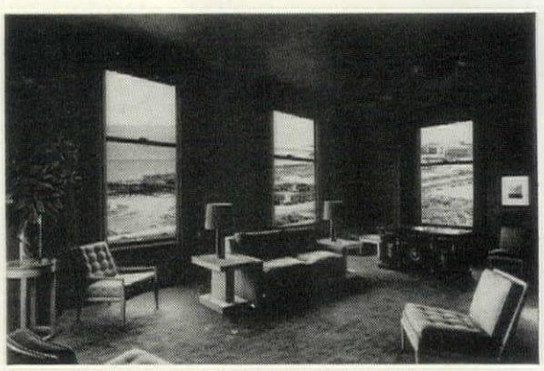




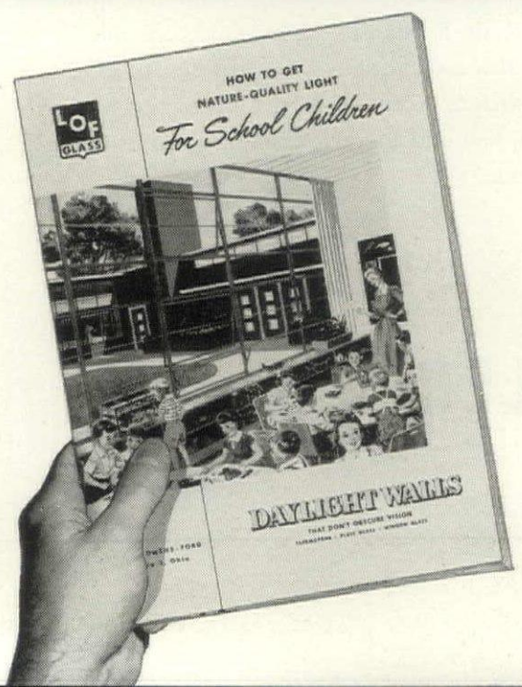
Note the confining effect when Holabird & Root & Burgee's design has been retouched to show what opaque walls would do to the library.



Loebl, Schlossman and Bennett of Chicago specified walls of *Thermopane* for Lucien Lelong Inc. The salon now has a living mural. It also has thermal insulation for winter and summer, acoustical insulation, plus natural daylighting, sunshine, and a great feeling of freedom—the joy of not being "cooped up".



Wouldn't it have been a loss to wall out the daylight, sunshine, view and the sense of spaciousness?



NEW BOOK ON DAYLIGHTING SCHOOLS—*FREE*

TO ARCHITECTS AND LAYMEN CONCERNED WITH SCHOOL DESIGN

This 24-page, beautifully illustrated book contains the latest scientific studies in school lighting; a clear, brief presentation of data from *Recommended Practice*, and photographs of new schools in all sections of the country showing how architects have achieved nature-quality light in classrooms. The book also contains a great deal of data on school design and materials which any architect will be glad to have close at hand. Send coupon today for your copy.

LIBBEY·OWENS·FORD GLASS COMPANY
8823 Nicholas Bldg.
Toledo 3, Ohio

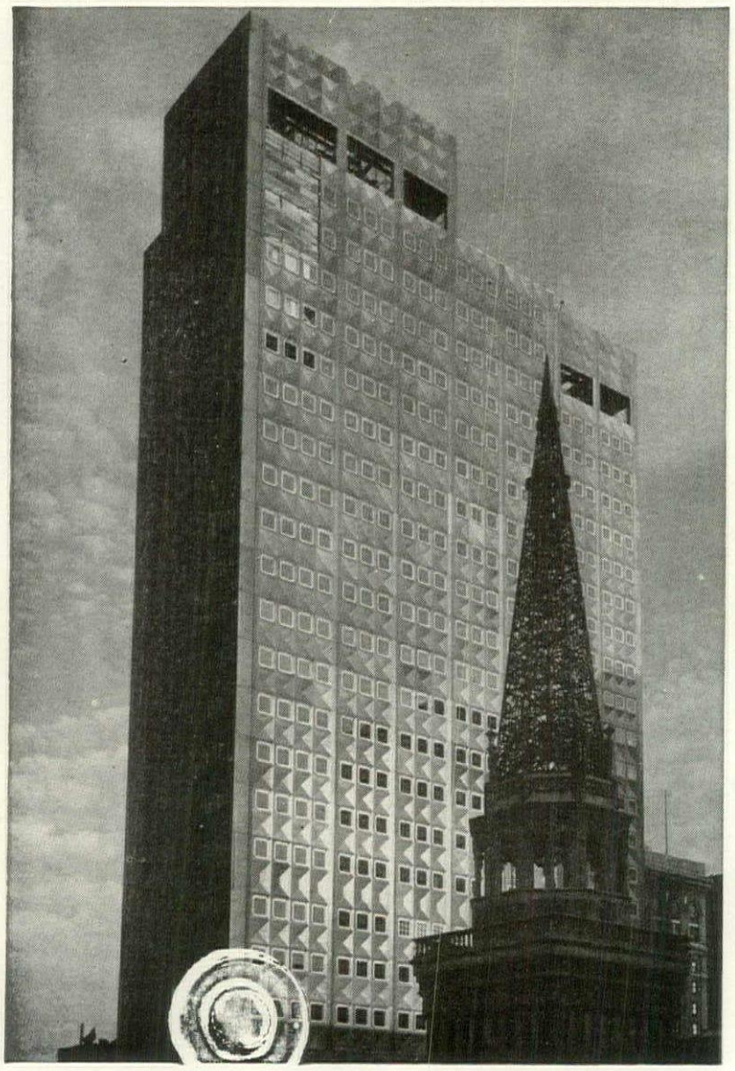
Please send me free copy of HOW TO GET NATURE-QUALITY LIGHT FOR SCHOOL CHILDREN.

Name_____

Address_____

City_____ State_____

Firm_____



General Contractor says:

Mr. James Murphy, vice president of engineering, The George A. Fuller Company, New York, says, "Because the flooring goes up as Q-Floor raceways are laid, construction costs can be reduced in large buildings, such as Alcoa's 30-story office building."

Electrical Contractor says:

"When we put in a G-E Q-Floor wiring job, we know electric service will never become obsolete. New wiring can be pulled through the many available cells at any time," says Mr. Harry Fischbach, electrical contractor.

The Alcoa Building, Pittsburgh, Pa.—
new home office for Aluminum Company of America

Architects—Harrison & Abramovitz, New York City
Associate Architects—Altenhof & Bown and Mitchell & Ritchey, Pittsburgh, Pa.
Consulting Engineer—Edward E. Ashley, New York City
General Contractors—The George A. Fuller Company, New York and Pittsburgh
Electrical Contractors—Fischbach & Moore, Inc., New York City

Q-FLOOR WIRING

SIZE UP YOUR PLANS for electrical flexibility

Whether you're planning thirty-story or two-story buildings, you can plan ahead for electrical flexibility with G-E Q-Floor wiring.

With General Electric Q-Floor wiring, your buildings will be prepared, throughout their lifetime, for the electrical demands of changing floor layouts.

With G-E Q-Floor wiring the cellular floor *is* the raceway system. That's why tomorrow's unforeseen demands for additional distribution and new power, signal, or telephone service can be met so quickly. Electrical outlets can be added or re-located within six inches of any spot on the floor area... at any time... in quick time.

For further information on General Electric's Q-Floor Wiring, write to Section **C 2-24,** Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—

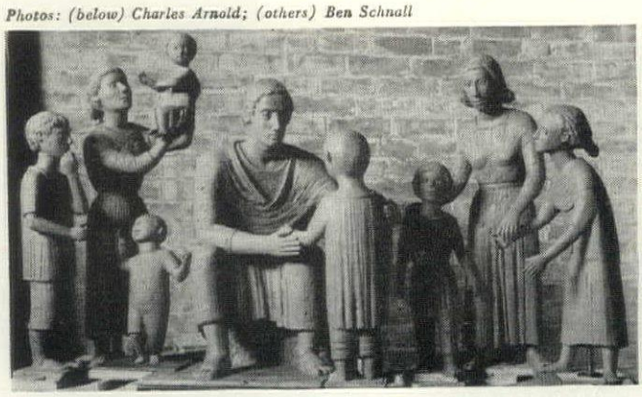
GENERAL ELECTRIC

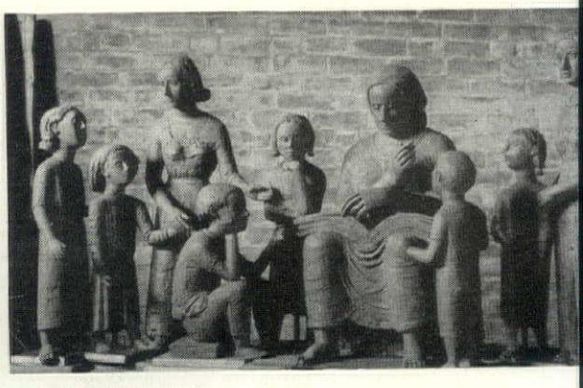
Windows in children's rooms are unbarred, but are secured by the barrier of height

HOSPITAL, SCHOOL, GUARDHOUSE

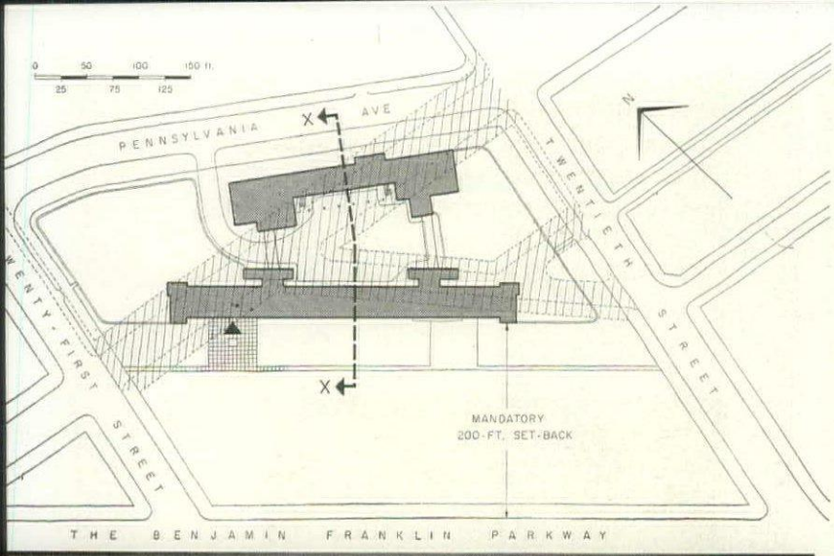
Stern three-in-one design gives this youth detention center pleasant security, gives Philadelphia a modern civic building

Photos: (below) Charles Arnold; (others) Ben Schnall



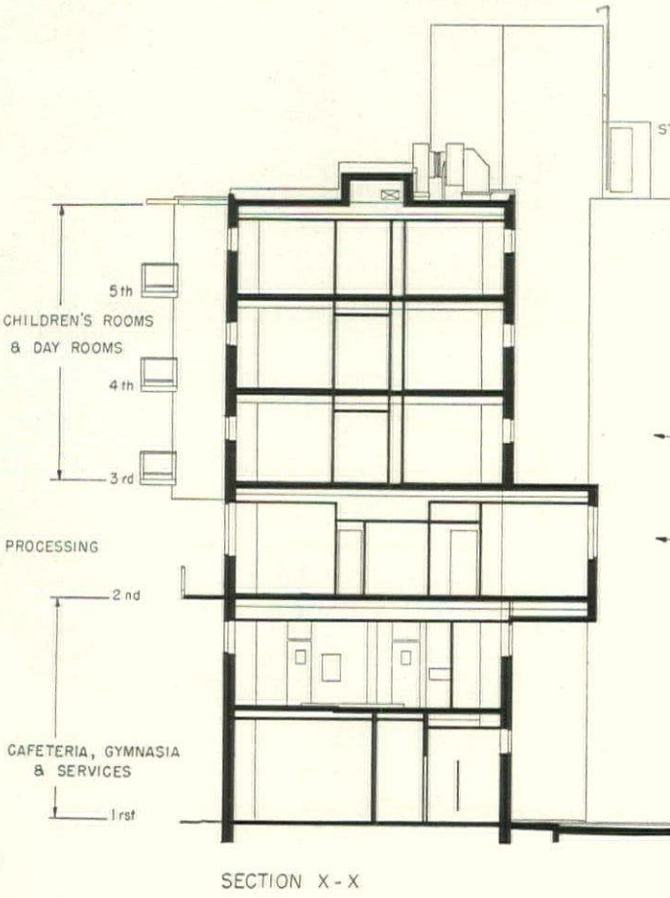


Groups by Sculptor Waldemar Raemisch will stand before blank lower walls of facade shown above

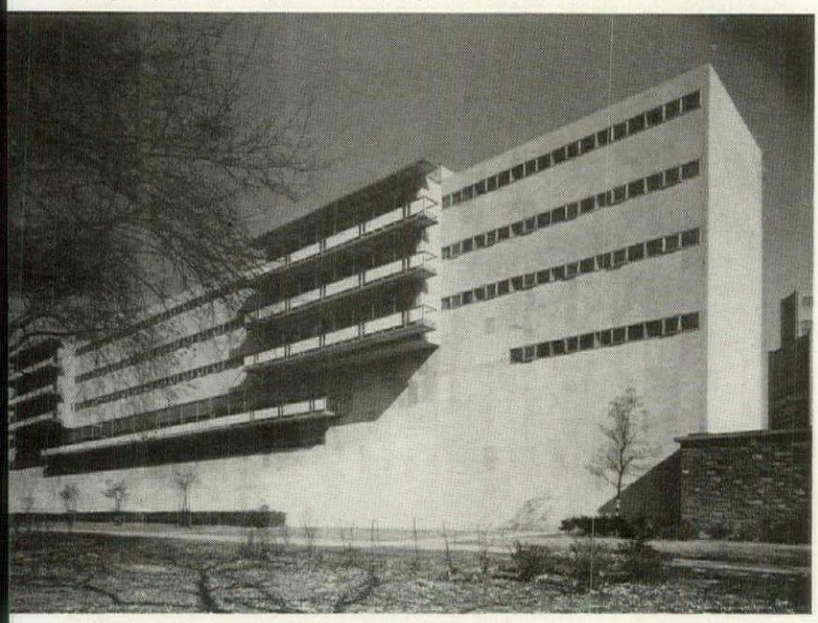


Street indicated in tone, left, was diverted to create site

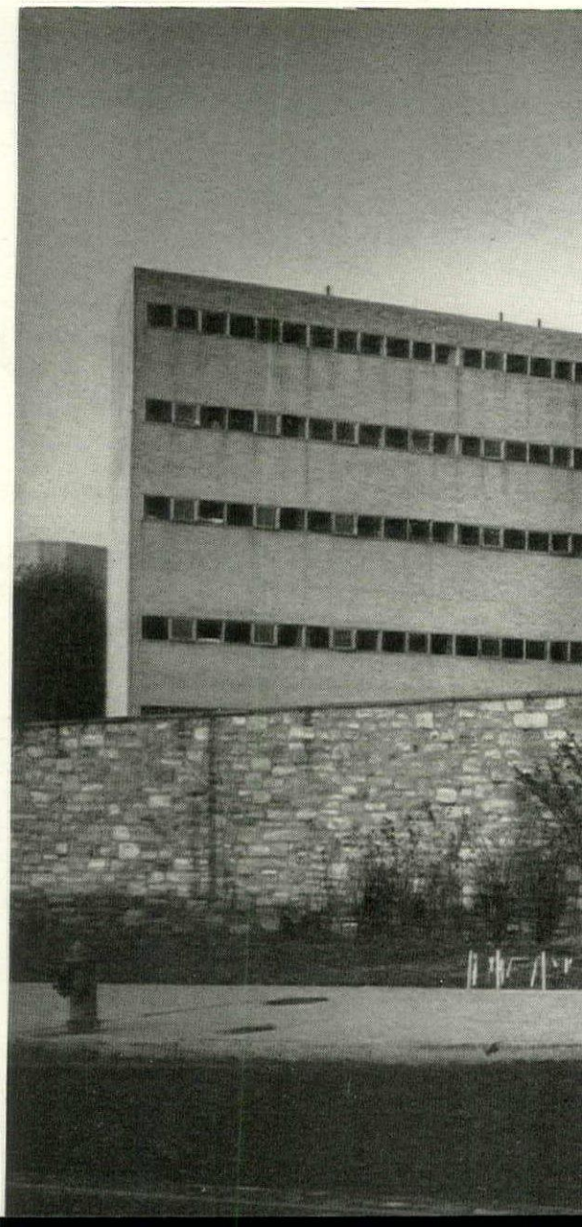
Building has two sections, connected by two two-s



SECTION X-X



Southeast elevation will later bear sculpture shown on preceding page



Design of this building was a job of juggling paradoxes

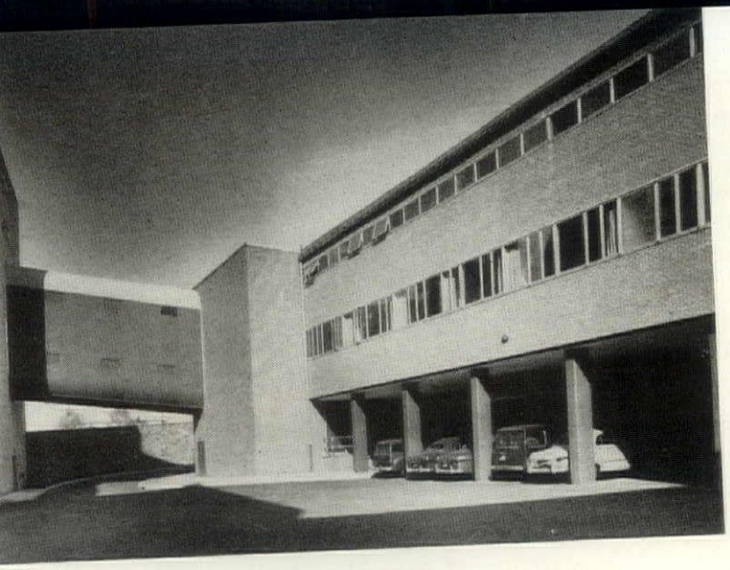
The building had to be:

- *a lockup without bars,*
- *a monument without munificence,*
- *a kindly symbol of nonpunitive authority,*
- *plus a structure to please the dignified Art Commission of Philadelphia and at the same time confine a restless crew of delinquents, some of whom can escape through openings considerably smaller than this page.*

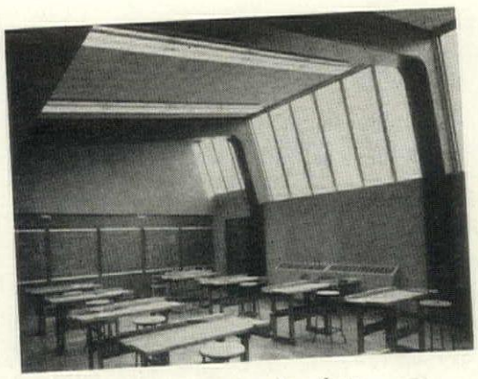
A detention center receives delinquent boys and girls, holds them temporarily (for 10 to 16 days) and acts as a stage on which to study them and decide what to do next. Not a reform school or a psychiatric hospital, this is a little of both, with schoolrooms added.

The architects were given a full market basket of ingredients that are difficult to cook into a good design. For instance, the site is almost the geographic center of the pattern of juvenile delinquency (ranging from truancy to homicide) in Philadelphia, yet it is also on the Benjamin Franklin Parkway, one of the Quiet City's noblest avenues, so the structure had to be a civic landmark. But because the basic trouble with most of the children who are dragged in is that they have had "too much authority without love," the interiors of the building had to be warm and friendly.

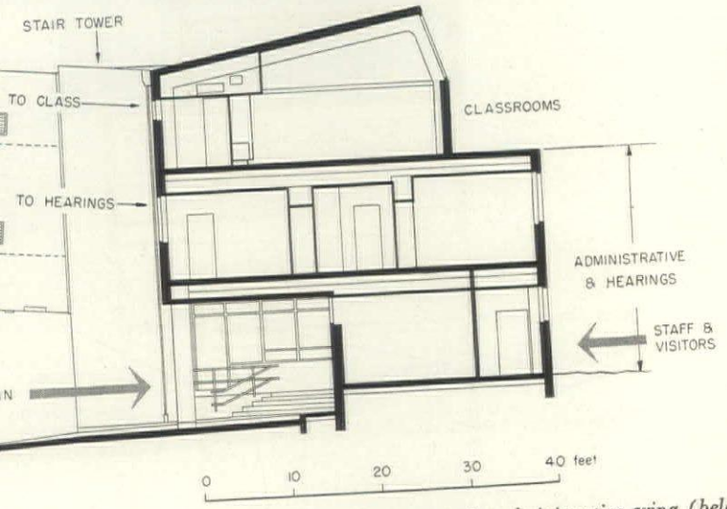
Overleaf is a breakdown of some specific problems and how they were solved—efficiently and architecturally:



LOCATION: Philadelphia, Pa.
CARROLL, GRISDALE & VAN ALEN, architects
SHERWOOD NORMAN, consultant
SEVERUD-ELSTAD-KRUEGER, structural engineers
A. EARNEST D'AMBLY, mechanical engineer
McCLOSKEY & CO., general contractor



Classroom's high wings need no bars



Children and outsiders never meet in circulation, except by prearrangement. Children are brought in through court entrances, while others use main entrance on this side of administration building in section, left.

Youth Center presents its administrative wing (below) to minor street. Row of classrooms is on top; 12' wall encloses playground



How did the architects invest this penal building with a character that fits a parkway site?

First by using a large simple shape, and sheathing it in a venerable material, limestone. ▸By omitting bars from all windows. ▸By routing traffic so all unloading of delinquents is done inside a court, between two wings of the building, shielded from view by 12′ stone walls. ▸By allowing the very size of this structure to make it seem institutional. The mass was not resisted or diminished; the buildings were allowed to stand as a stern but civilized symbol of authority. ▸By including two handsome groups of statuary (p. 101) which are to be added to the lower facade along Benjamin Franklin Parkway, to take the curse of bleakness off the necessarily blank walls at that height. (Inside are gymnasia, toplighted.)

How is the interior traffic handled so that boys, girls, parents and plaintiffs do not mingle at the wrong time?

Very intricately, and very efficiently (see drawing, right, and plan, next page). Children go from the interior court in (and up) the far ends of the administrative wing (girls east, boys west). They are checked in, then girls and boys go across separate double-decked bridges to the separated ends of the habitation wing. On the lower level of this wing are showers, clothes-issue depot, examination rooms and other receiving facilities.

After processing, they go upstairs to supervised "neighborhoods" containing a maximum of 12 bedrooms. They go to and from classrooms on the administrative wing's top floor via the top level of the bridges.

For hearings, the children go to the administrative building on the lower level of the bridge, and are held in anterooms between the end of the bridge and the hearing rooms.

What precautions were taken against escape?

First, a design which permits constant but not brutal supervision and control, even when children are sleeping. (See text below for more details). ▸By building the structure for moderate security, then adding maximum security screens after some of the kids nearly escaped. More precisely, by adding spring shock absorbers around the stainless-steel mesh that covers the movable windows in the children's rooms. ▸By walling the area. This is not too obvious, because the buildings themselves are used as walls. But there is a frank and handsome 12′ wall around the outdoor playgrounds. ▸By using tempered glass in all security windows. ▸By making all doors and other utilities (lights, elevators, etc.) work only by key. Astragals had to be added to some locks to prevent picking.

How is the interior warmed up and made cheerful?

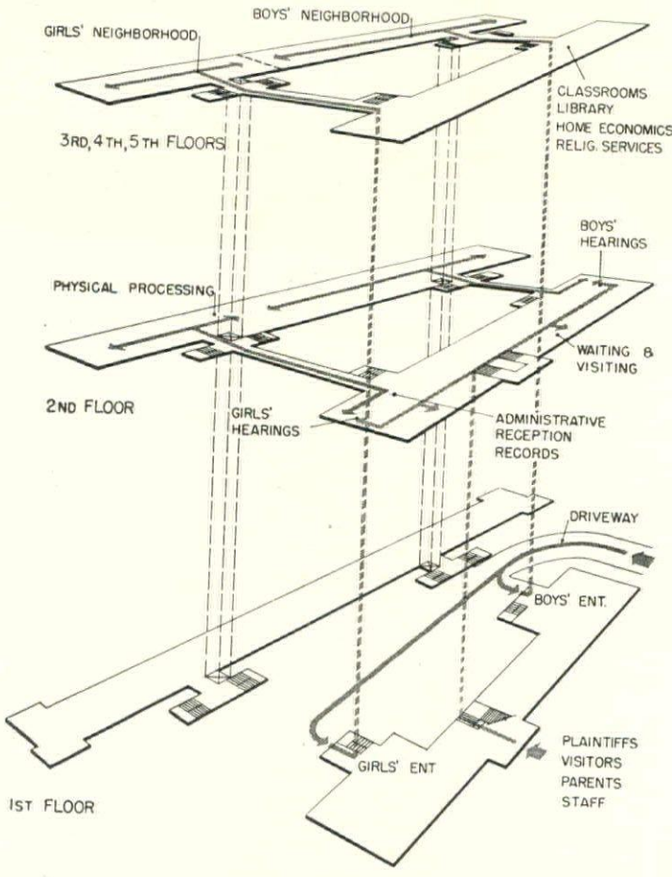
With color. The architects used bright, strong colors. Not specially mixed, they came straight from the manufacturer's cans to permit easy and accurate future maintenance. The building is not painted with garish whimsy; a consistent structural color vocabulary was used. For this and for the selection of furniture the architects were awarded the 1952 award of the Philadelphia Chapter of the Home Fashion League Inc.

How is control maintained at all times?

In classrooms, in gymnasia, in traffic around the building, this is the responsibility of overseers. They are assisted architecturally by the absence of hidden corners, and on stairways, by having the entire run visible from any step. ▸There are glass control booths centrally located in each of the "neighborhoods" of the habitation building (see enlarged plan, p. 106). Visibility is complete: the overseer can look down the hall and see any child leave his room; at night, a light on the overseer's control board lights when any door

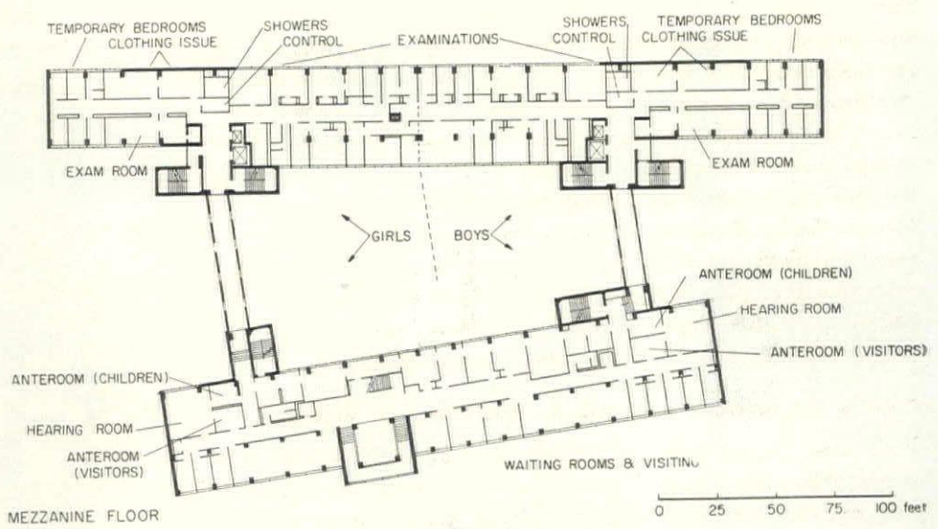


Bridges are vital links in circulation diagrammed below.

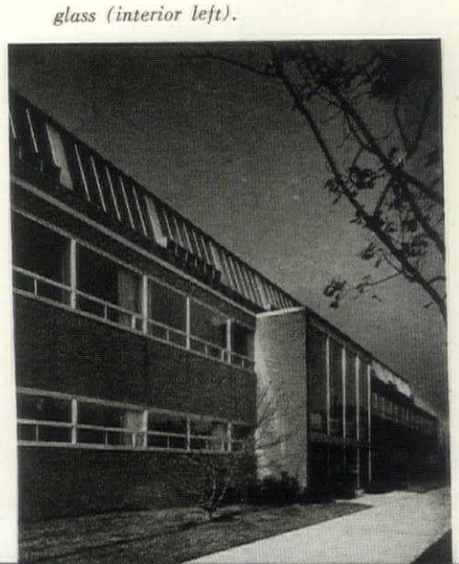


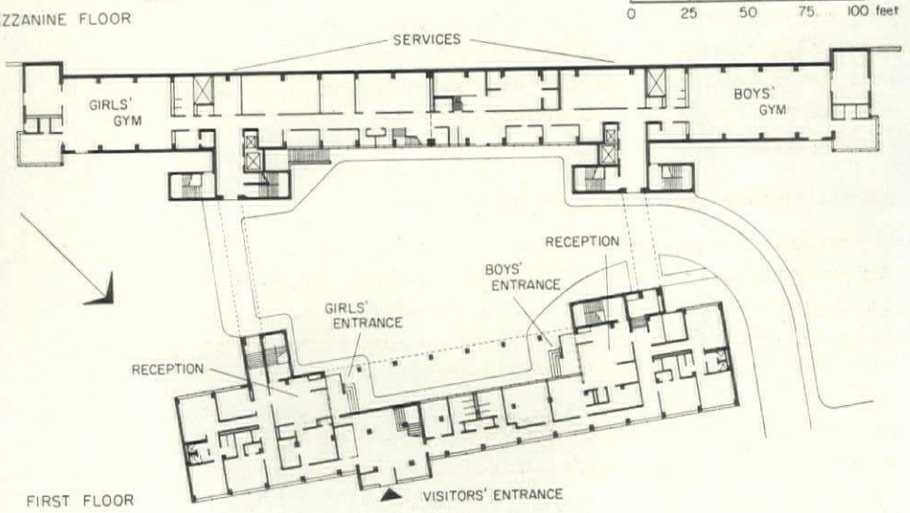


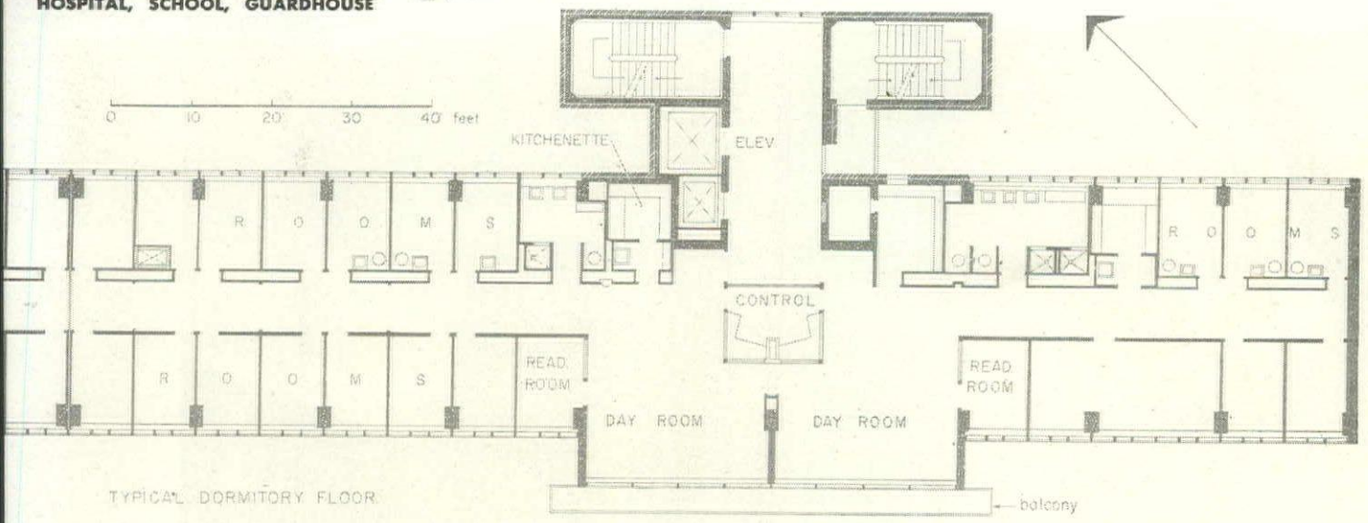
Slanted skylights light classrooms evenly, but sometimes create a cooling problem. In plans of first and typical floors (right) girls occupy the near end of habitation wing, and boys the far end. Boundary can be shifted to adjust for heavier occupancy by either sex (normal is ⅔ boys, ⅓ girls). Children are not visible to stares of outsiders at any point, meet them only at hearings in second-floor ends of administration and school wing.



Entrance lobby is set behind two stories of glass (interior left).



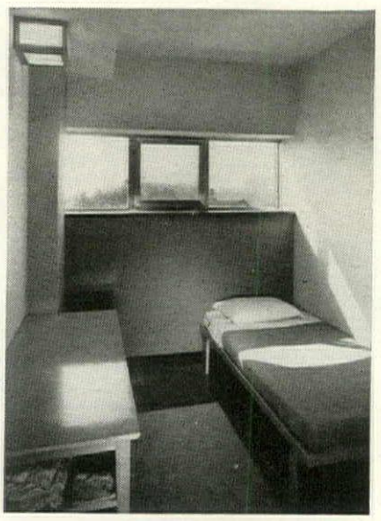




opens even an inch. ▸ If the overseer wants to see what is going on in a room, he can look in a glass panel in the door; this panel is set forward so that no part of the room is obstructed from his vision. ▸ From the control room, complete visibility is afforded into the recreation rooms, both active (games) and passive (reading). ▸ Half the rooms have their own plumbing, so that they can if necessary be used as complete lockups. (This, however, is viewed with horror by authorities, who provided these rooms for children psychologically blocked from mingling, particularly in toilets.)

How much did the building cost?

Total, $2,027,250; $17.75 per sq. ft.; $1.53 per cu. ft. The building contains a total of 1,325,000 cu. ft.



Balconies mark dayrooms and offices on facade. Slab-band construction decreased height of structure. Bedroom wing is radiant heated (to prevent children from tampering with system); other wing is heated by convection (for economy).

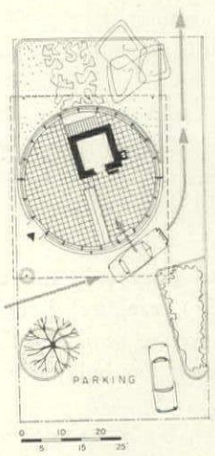




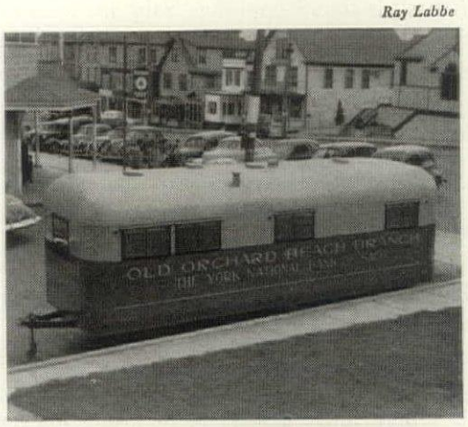
© Stoller

FISH-BOWL BANK for drive-in customers

Circular glass structure fits any lot, exploits best features of gas station, tollgate and showroom



Ray Labbe



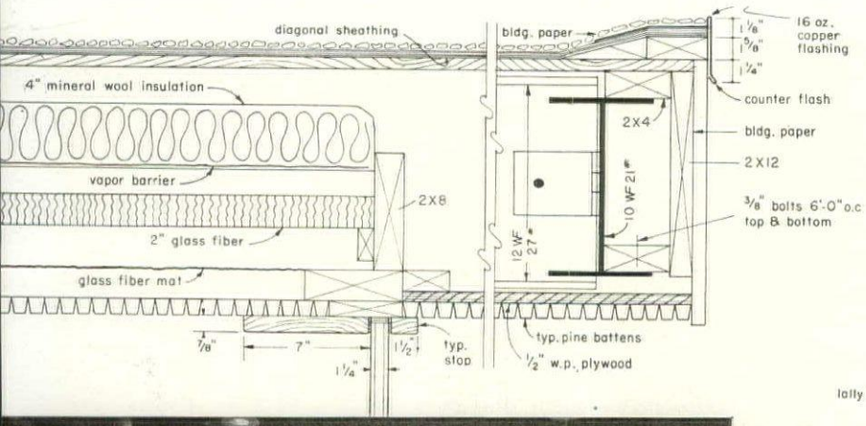
Trailer bank, parked next door to police station where cash was kept, was used by York National to test the Old Orchard Beach market before building the new drive-in bank.

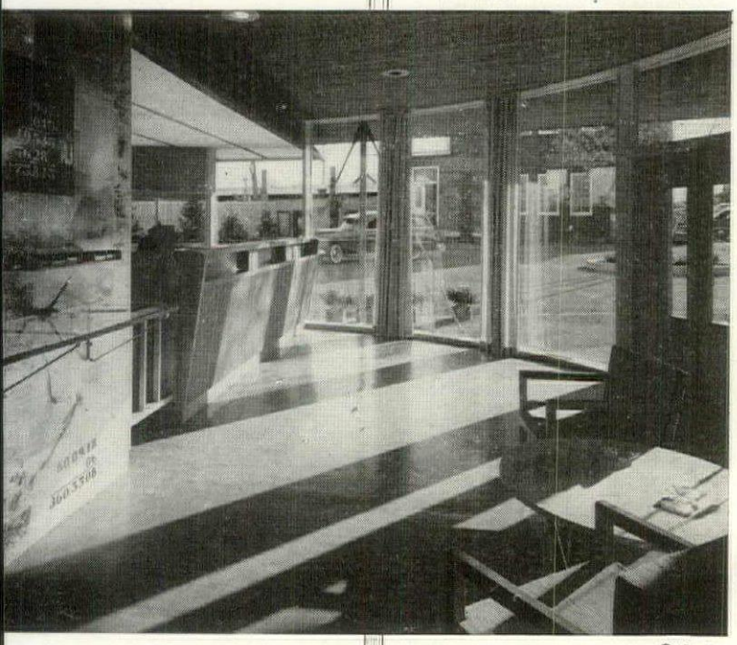
York National is Maine's oldest bank. With a *real* tradition of 150 years securely behind them, its directors have always felt free to be one step ahead of the crowd—witness the trailer-bank experiment (below) and the new glass bank above.

So they went to New England modernist Carl Koch for this rather special building in a rather special community (pop: 5,000 in winter, 30,000 in summer). In its design Koch solved three problems common to many other jobs and places: 1) how to develop a new building type so universal that it will work almost anywhere; 2) how to make a fine art (murals) practical (on a bank vault); and 3) how to develop a convenient system of detailing, unfettered by traditions or modern dogma.

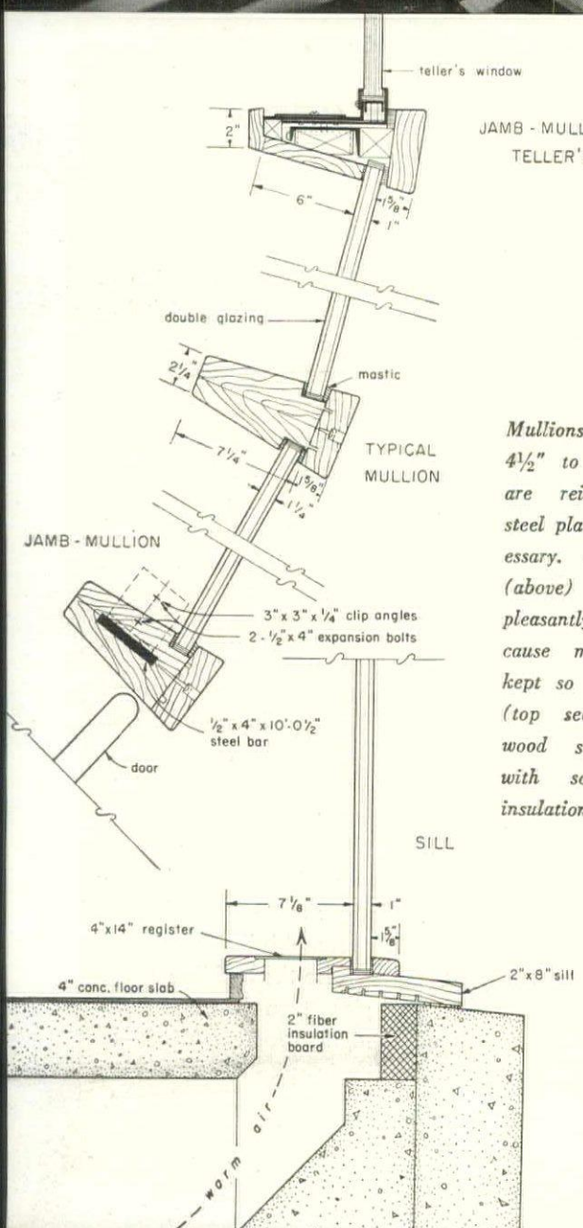
New building type: the drive-in bank. In our spread-out, motorized way of life, the drive-in movies, hot-dog stands, laundries, stores, showrooms and now banks are all part of an increasingly popular trend. Like all radical innovations, these structures have few antecedents, pose new problems that call for new answers.

Here are the problems of a drive-in bank and the way Koch solved them: *Problem No. 1*—motorists must be able to drive into, around and out of a drive-in bank. *Solution:* make it circular, surround it with a high curb, let traffic flow around it like a merry-go-round. *Problem No. 2*—motorists must notice the building as they go by at 40 mph. *Solution:* make it all glass, turn the whole building into a display case, light it up at night. *Problem No. 3*—the building must convey a sense of stability in spite of all the glass.



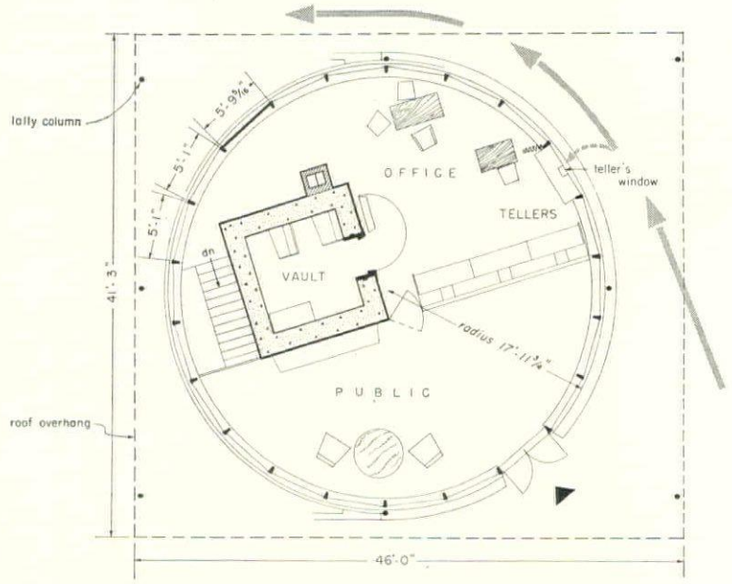


© *Stoller*



Mullions taper from 4½" to 2" in width, are reinforced with steel plates where necessary. Public space (above) is airy and pleasantly open, because mullions were kept so thin. Ceiling (top section) is of wood strips backed with sound-absorbing insulation.

LOCATION: Old Orchard Beach, Me.
CARL KOCH & ASSOCIATES, architects; LEON LIPSHUTZ, associate
R. G. VANDERWELL, heating & ventilating engineer
BOLT, BERANEK & NEWMAN, acoustical engineers
GYORGY KEPES, painter
YORK NATIONAL BANK OF SACO, general contractor & owner



Plan shows 36' diameter cylinder; stair behind vault leads to storage basement

Solution: make a big, attractive, solid-looking feature out of the vault. (Said one Old Orchard Beach resident: "That's where I'm going to keep my money—I can stand on the sidewalk and keep an eye on what's happening to it.")

Koch's logic produced a bank that is not only good in this particular spot but (being circular in plan) could be a good solution for almost any site: cars could enter any lot on one side, drive around the building to the teller's window, and leave on the other side. Like the standard gas station or the standard tollgate, this bank has a plan that would work anywhere.

New functional art: the porcelain mural. As in the Fitchburg library (AF, July '51), architect Koch called upon MIT's professor and painter, G. Kepes, gave him this problem: how to keep the vault from looking too bulky for this graceful little building?

Solution: camouflage the big mass of concrete the way the Army camouflages a pillbox. Kepes sheathed it with porcelain enameled steel, baked a small-scale abstract mural into the surface. The spectacular result is shown opposite. Said one local resident: "Few people understand modern art, but this is easy. There are 'sums' scattered over the surface of the vault, addition, multiplication and percentage signs—just as if some banker had been doodling. Light bounces off this surface and sparkles on the glass walls. It looks swell!" (See opposite.)

New detailing: using convenient materials. What makes Koch's details so interesting (and justly famous) is that he is no "purist." He will use just about any material, gadget or device that happens to come in handy. In this building he mixes steel, wood, glass, plastics, stainless steel, plywood, porcelain enamel. When he wants to make a thin wooden mullion strong enough to act as a doorjamb, Koch simply hides a steel plate inside his millwork (see details on this page); and when he needs to brace a light steel structure against wind loads, he uses diagonal tie rods (exposed or concealed). This makes for a flexible architecture and low-cost building.

How can big cities save their downtown districts from strangling in their own congestion?

Congestion at the heart of America's great cities is one of the most pressing problems facing the architectural profession and the building industry today.

This report is, we believe, the first joint statement ever approved by top-flight spokesmen from all the groups most deeply involved in the problem and its solution—groups ranging all the way from architects to department store owners, from city planners to parking garage operators, from traffic experts to truck fleet operators, from city officials to automobile manufacturers. It was drafted at a two-day forum sponsored by this magazine.

Obviously, such a brief statement cannot explore every facet of so complex a problem, but we believe it will contribute importantly to the thinking of our readers.—The Editors.

13 Answers: 1. By clearer thinking aimed at realistic goals

Much clearer thinking and much broader understanding are as necessary as much more money spent if America is to save the center of her cities from strangling in their own traffic.

We can help that clearer thinking and broader understanding only if we restate this very complex and difficult problem in the simplest possible terms—even at the obvious risk of oversimplification.

One reason the problem is so difficult is that it involves so many component problems which must all be solved together. For example, little good can come of costly new expressways to the downtown district unless better parking facilities are created for the cars brought in by faster access. Conversely, little good can come of easier parking if it attracts more cars than streets and highways can accommodate. Both the improvement and the timing must be integrated.

An equally important difficulty is that traffic relief is just one facet of the much bigger problem of urban development and redevelopment. Any attempt to cure traffic congestion "in the street" would treat the symptoms rather than the disease. No solution will be more than a brief palliative unless it is integrated into a comprehensive city plan. No solution will prove lasting unless zoning sets reasonable limits to central city density. No solution should forget the traffic relief that would result from the constructive decentralization of certain types of activity. No solution should overlook the traffic benefits that might be planned into redevelopment of the blighted area which almost always adjoins the busiest district.

All these manifold problems must be met separately, so we have agreed on certain specific recommendations for attacking each of them in turn. But all of them are so interrelated that they must also be solved together. Consequently, our first and strongest recommendations are these:

1. Every city struggling with congestion should fix in the Mayor and the Planning Commission responsibility and authority broad enough to face the problem whole and coordinate the activities of all the municipal agencies among whom various functions impinging on congestion are now scattered; viz., the Police Department, Building Department, Highway Department, Public Works Department, Traffic Engineer, etc.

2. Every city should also have a municipal agency or authority to cope directly with its parking problem. This agency should have the right of eminent domain to acquire land when and where necessary for additional off-street parking so located that the new facilities will not create bottlenecks in the streets.

3. The city's efforts to solve the downtown congestion problem need the support of a determined and well-financed citizen's group representing the entire community rather than any special interest. The model for such a citizens' group might well be the Allegheny Conference on Community Development whose activities are the principal reason why Pittsburgh is making such dramatic progress toward the solution of its municipal problems.

Even with the best organization no solution to the traffic and congestion problem of our big cities can succeed without first setting realistic limits to the goal. All of us would like to help make possible freer use of the downtown streets by private automobiles, but we are up against two hard questions:

1. Can our cities afford the space to provide at their centers the unlimited parking that is possible on their outskirts? To park all the cars whose owners would prefer to drive downtown, Boston found it might have to tear down ⅓ of all its downtown buildings. Suburban shopping centers try to provide 4 sq. ft. of parking area for every sq. ft. of rentable area. Downtown we fear the best that can be hoped for is a parking ratio 1/15th as high.

2. Can our cities afford the money needed to provide highways and parking space for so many cars—an investment which at least one city estimates at $4,000 for each added rush-hour car commuter? This is three or four times the investment per commuter that city would need for the most expensive form of rapid transit—an underground or elevated railroad.

Few large cities can solve their traffic and congestion problem without relying heavily on mass transportation rather than the private car.

Good mass transportation made the centralized big city possible, and good mass transportation is essential to preserve it.

2. By using the price mechanism to ration street use

Perhaps the first thing everybody should understand about downtown congestion is that we are dealing with an almost limitless demand pressing on street and parking facilities which must continue strictly limited. Most American families already have a car; a very large proportion of them would prefer to drive to work or shop. The number of private automobiles on the road has increased 65% since 1945 and is still soaring higher. Even a five-fold increase in street and parking facilities at a cost of perhaps $50 billion might soon be overtaxed, for every betterment in these facilities stimulates still greater demand.

Today that demand is controlled and limited only by congestion—by the amount of delay, annoyance and inconvenience motorists are willing to put up with to use their own cars on the downtown streets. This rationing-by-congestion operates on a first come, first served basis, so a high percentage of the curb-side parking space within 500′ of the downtown core is apt to be taken up by all-day parkers who arrive before 9:00 A.M.

It is high time our cities worked out a more intelligent way to allocate or ration the use of their downtown streets.

Better use of the price mechanism offers perhaps the one best hope of rationalizing the use of our downtown streets, just as the price mechanism has proven the one best means to balance supply and demand in every other line. Today the price mechanism is not allowed to function at all on this problem. Not only is use of the streets for moving traffic completely free. Use of the sidewalks for loading and unloading goods is also free even on the most congested streets at the busiest hours. Use of the streets for parking is priced at only a small fraction of its true cost. As a result, millions of people elect to drive downtown in the often mistaken belief that this is cheaper than carfare; most motorists balk at paying even the most reasonable charge for off-street parking; and shippers have no profit incentive to relocate in uncongested districts or to cooperate in getting trucks off crowded streets at busy hours.

What would happen if all the various urban services and land uses necessary to move people and goods were repriced on a more economical basis? We believe people should be free to choose their means of transportation, but they should be willing to pay some approximation of its true cost.

We believe many people would redistribute their use of transportation services and parking facilities if they were repriced so that for example, more people could see that mass transportation is the cheapest way for them to travel. We believe far more people would be willing to pay for off-street parking if curb-side parking were not almost free. We believe fewer people would insist on parking so near the busiest corners if they saw the saving offered by walking two blocks more to cheaper parking sites. We believe there would be fewer trucks jamming busy streets if trucking rates reflected the true cost of curbside pickups and deliveries during busy hours on overcrowded streets.

We believe that repricing various services would also encourage uneconomic users of downtown buildings to relocate in other areas more quickly, thus freeing space for parking.

3. By constructive decentralization of some activities

Business concentrated in the center of our growing cities for one principal reason: the center was the easiest point for the largest number of people to reach. Basically, there are two types of business for which a central location is still apt to be very important:

1. Executive offices, government offices, main offices of banks, law offices, sales offices—i.e., any office which needs quick and easy accessibility to a maximum number of people.

2. Big stores whose principal competitive advantage is their ability to carry a more complete line than any small store or any suburban branch. These big stores must be so located as to attract crowds big enough to justify their large assortment. They must be located close enough, one to another, to make competitive shopping easy for customers.

Around these two central magnets many other activities have gathered downtown. The business offices have attracted service trades and service industries. The big stores have attracted hundreds of smaller stores seeking to profit by the crowds of shoppers drawn by their big competitors.

As all these businesses have grown they have generated still more business downtown. Recent surveys show that although congestion is slowing down the increase in downtown retail trade, the concentration of executive offices, law offices, etc., and their attendant service industries is, if anything, accelerating.

On the other hand, there are other business activities for which decentralization is proving profitable. Specifically:

1. Merchants are finding suburban shopping centers a highly profitable way to increase their sales.

2. Certain businesses to which economical handling of a large volume of goods is more important than easy accessibility to people are beginning to seek locations where trucks can move more freely; wholesalers are beginning to separate their sales offices from their warehouses; department stores are beginning to set up outlying warehouses from which to deliver goods ordered downtown.

3. Many manufacturing industries now located downtown as a matter of historical accident rather than because proximity to the center was important to their distribution are beginning to move out.

This kind of decentralization is highly desirable and should be encouraged wherever possible. But decentralization offers no solution to the problems which traffic congestion is creating for those types of business for which a location easily accessible to large numbers of people is essential.



Roy Stevens

4. By separating car and truck traffic in time and space

Traffic delays have become a major element in the cost of big-city trucking. Every minute a big truck is held up in traffic costs the truck owner 10¢ to 15¢. Conversely, trucks lined up at the curb or trying to squeeze through crowded streets have become a major element in downtown traffic congestion. It is clear to all of us that it is costly for the trucking industry and bad for the city to have trucks competing with passenger vehicles for the same space at the same time on inadequate downtown streets.

There are three possible solutions to this problem, all three of which should be encouraged:

1. Separation by location: Businesses which involve large movements of goods should not be located in the most congested district.

2. Separation by off-street improvements: i.e., provision of adequate off-street facilities for the loading and unloading of trucks so that they will not block the streets by loading and unloading at the curb.

3. Separation in time: Trucking would cease to create any congestion problem at all if all pickups and deliveries in the central business district could be made before or after the crowded hours. The trucking industry is already partially organized on the basis of night and day operation and could adjust its schedules still further in that direction if stores and other buildings would have personnel available to handle early morning and early evening shipments. The truckmen's overtime or higher night wages could be largely offset by the time saved by easier passage through the streets.

Separation in time is probably the best of the three possible solutions, but it is also the most difficult. It would require a change in working hours by hundreds of different buildings and hundreds of different shippers, and it would result in higher rather than lower trucking costs unless all shippers would cooperate, for there would be no economy in picking up goods from one shipper in the early evening if the same truck had to make a daytime pickup next door.

Every reasonable municipal aid should be given to hasten and encourage all three of these solutions, but there are obvious limits to what government can do. For example:

- The city should (and usually does) enact zoning ordinances which would keep warehouses and other large handlers of goods from locating in congested central districts, but what about warehouses already there?
- The city should (and usually does) enact building standards requiring off-street loading in any future building, with adequate receiving rooms and adequate elevators, but what about existing buildings? Some cities already make these requirements retroactive. Others feel the remodeling cost would be too great. At the very least we believe every present building should be forced to provide an adequate ground-floor shipping and receiving room to minimize the time trucks must spend at the curb.
- The city can (and in some cities already does) encourage early morning and late afternoon delivery by reserving curb space exclusively for trucks in these off hours. But how much further can government go along this line? What would happen if trucks were forbidden to enter or park in the busiest district during the congested hours?

We believe private enterprise must play a larger part in solving the truck congestion problem, and this is another case where it would be well to put the price mechanism to work.

As things stand now, trucking prices do not accurately reflect trucking costs. State and federal regulatory bodies apply the same charges for pickup or delivery anywhere in the city. This gives the shipper (or receiver) no incentive to provide personnel for shipping or receiving goods before or after hours, no incentive to undertake the capital costs required to provide adequate off-street facilities, no incentive to move to locations which trucks could reach more easily (and therefore more cheaply). Only on local shipments is the trucking industry free to reflect in its charges the great difference in its costs for making deliveries, which often vary greatly, not only from district to district but from building to building.

We suggest the time has come when trucking companies should ask permission to apply penalty charges or maintain differential rate structures which would share with shippers and building owners the savings the trucking industry could achieve by not wasting so much time in traffic delays—differential rates which would encourage owners to provide personnel for after hour or early morning pickups and deliveries, encourage the creation of off-street loading facilities, encourage large shippers to locate outside the most congested areas. Lacking any such profit incentive to do otherwise, many shippers deliberately locate in old downtown buildings with inadequate loading and elevator service just because these old buildings offer them the lowest rents.

5. By intelligent redevelopment

No solution to the downtown traffic problem should overlook the very great possibilities offered by the wisely planned redevelopment of blighted areas which almost always adjoin the heart of town. In this redevelopment one of the first objectives should be to take advantage of some of the cleared land to provide broader streets leading to the central districts or expressways leading around it, to finding low-cost land for all-day parking, and to the possibility of so developing the land in superblocks around more adequate parks, etc., that more people who work in the central district would wish to live there near their jobs.

6. By encouraging mass transit to carry more people faster

Since there are such clear limits to what can be done for private cars on downtown streets, we are all agreed that greater use of mass transportation must be encouraged.

Today the mass transportation industry finds itself in a critical position which should be a matter of serious concern to every community whose center is dependent on the continuance of good mass transportation. Some of these troubles result from rapidly rising costs. Others trace directly to the automobile, which has: 1) added to the transit companies' costs to the extent that it has contributed to congestion in the streets and so slowed trolleys and busses down; 2) taken away many of their passengers, especially the mid-day passengers which are the most profitable of all.

Ever since World War II, mass transportation has been losing passengers. In 1951 it carried 7% less than in 1950; in 1952 it carried 4% less than in 1951. But even today more than 60% of all persons entering downtown districts of cities over 100,000 population rely on mass transportation—more than 40% for cities from 100,000 to 500,000, 63% for all cities over 500,000, 80% for big cities like New York and Philadelphia. These 60% of the persons are carried by 6% of the vehicles. Contrary to general belief, the transit companies are still carrying 15% more passengers than at the end of the depression.

Faster decisions by Public Service Commissions on applications for higher fares to offset rising costs would certainly help the transit companies, but higher fares alone will fall far short of solving the problem. Too many transit companies have found that higher fares drive too many passengers to competing means of transportation and so produce little increased revenue. The transit companies cannot hope to regain prosperity by providing less and less service for more and more money.

In large measure the future of mass transportation will depend on what the transit companies do to help themselves. But here are some important ways in which the community can help too:

1. Transit companies should no longer be burdened with special taxes and charges dating back to times when mass transportation was a highly profitable monopoly. They should not be asked to carry the full burden of maintaining portions of the street, nor should they be asked to carry school children at inadequate special fares.

2. More consideration should be given to mass transportation needs in designing highway systems. (New York City, on the contrary, forbids busses on most of its highways.)

3. Every aid should be given to help mass transportation move faster through the streets. As traffic is speeded up to the point where time savings can be reflected in schedules, operating costs will drop and transit companies will be that much better able to improve their service and attract more riders.

4. Bus lines should not be required to undertake unprofitable extensions, and more turn-around service should be permitted.

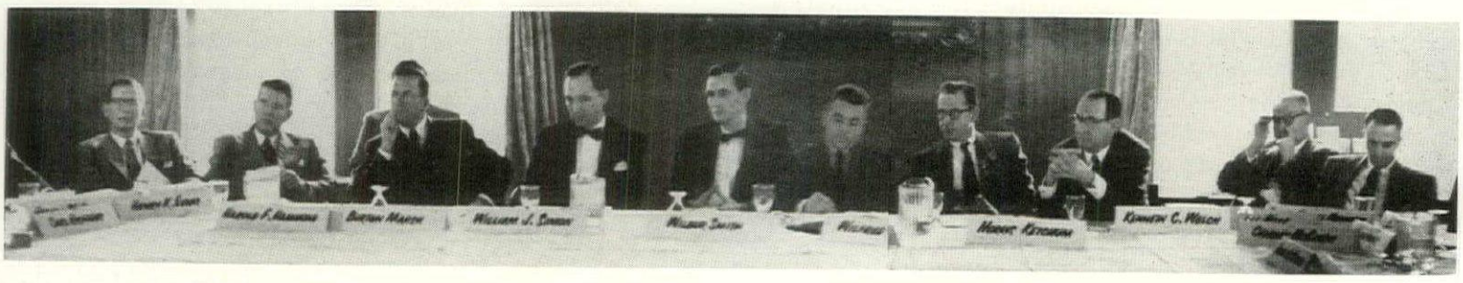
5. Adequate parking facilities should be provided at key points along transit routes and tied in where practicable with special express service, in order to encourage more persons to leave their cars outside the congested districts. The city will find it much cheaper to provide parking there than downtown, and such parking facilities when wisely located have been proving their value in many places.

6. Zone fares, which are now universal all over Europe, should be brought into more general use. Lower fares for short trips would attract more passengers. Higher fares for long trips would more nearly cover the cost on long runs.

7. Every effort should be made by both the city and the operating companies to speed up service by more use of express busses, alternate block stops, etc. One bus route in Cleveland tripled its passengers by inaugurating express service.

8. Wherever possible mass transportation should be given preference on certain major streets, automobile traffic preference on the nearby parallel streets. Busses and automobiles rarely flow smoothly together through the same traffic stream, particularly in many narrow downtown streets. Such a sensible separation might be a good way to attack some wasteful route patterns based not on present need but on inheritance from old franchises and corporate structures.

9. Curb-side parking should be forbidden during daytime hours on all but the widest downtown streets heavily used by mass transportation lines.



7. By relating zoning to traffic

Traffic does not occur in a vacuum. Its amount and character are determined by the way land along the streets is developed and redeveloped. Thus, every city should re-examine its zoning ordinance to determine in what respects it promotes traffic congestion, and should revise the ordinance to coordinate its revision with the traffic capacity of the streets, or with the increased capacity for which the city is willing to pay.

8. By eminent domain if needed

Public powers to condemn, lease, sell and regulate land for parking purposes are essential to proper planning, location and operation of an adequate parking system. Private enterprise cannot always obtain necessary sites to achieve a proper balance of parking and street capacity; nor can private enterprise, without such aid and control, achieve a proper balance between short-term and long-term parking facilities.



Photos: Roy Stevens

9. By banning curb parking or fitting its price to its cost

Most obvious single factor in the traffic congestion which is now strangling the center of so many cities is the way cars are allowed to park along the curb of so many busy streets, often in flat defiance of "no parking" signs.

Not more than 20 cars can park along a 200′ block—ten on either side. But those 20 cars often block the passage of 500 moving vehicles, cutting traffic flow from 1,200 cars an hour to 700.

There is no good reason why *all* curb-side parking should be banned downtown, for the street pattern of most cities developed long before the automobile, and there are still many downtown streets whose traffic flow is small enough to permit parking. But there are also many busy streets where no parking should be allowed at any price.

The most expensive possible place to have cars park is on street space needed for moving traffic. Widening a busy street to permit this curb-side parking without obstructing traffic might well cost from $10,000 to $50,000 per parking space created. Permitting such parking without widening the street may cost still more in terms of business diverted and man-hours lost through traffic delays.

But here is the paradox—in many cities this most expensive of all parking space is still free to any motorist lucky enough or early enough to find it. Even where parking meters are installed the charge is strictly nominal. The rate on 99% of all meters (915,000 of them, to be precise) is 5¢ an hour; only 1% (9340) charge 10¢ an hour; only a handful charge more. In brief, there is an almost complete divorce between cost and price, and curb-side space which really costs far more than off-street space is priced much lower.

A few cities have now begun charging 25¢ an hour (5¢ for 12 min.) for curb-side parking at very desirable spots, and few of us can see any good reason why charges higher than the 5 to 10¢ an hour maximum now customary should not be inaugurated in all cities. (Note: in some states the courts have held that their purpose must be to help regulate parking and traffic rather than to raise revenue.)

> In this connection it is important to note this fact: the average motorists' disregard of "no parking" signs is notorious, but he is usually very honest about parking-meter charges.

The downtown parking problem will never be solved until motorists, merchants and all other interested parties recognize the obvious fact that parking space costs money—whether it be off-street or at the curb—and someone has to pay for it. It will never be solved as long as motorists are encouraged to consider free parking an almost inalienable right.

As long as curb-side parking is available to motorists at a small fraction of its true cost, motorists will be tempted to cruise looking for space at the curb, and the problem of providing adequate off-street parking will remain difficult. Off-street parking cannot be provided at the heart of any sizable city for less than 15¢ an hour, and there are few instances where the price is not higher still. Pittsburgh's new public garages, despite tax exemption, find it necessary to charge 35¢ for the first hour, as do the Boston garages erected by private capital on state-owned land.

Most of us believe that competition of free or very cheap parking at the curb is a major reason why venture capital has not yet met the demand for reasonably priced off-street parking.

10. By enticing the all-day parker away from the city center

The parking problem is really not one problem but two: 1) parking for people who drive to work and keep their cars downtown all day; 2) parking for shoppers and others who drive downtown for a short time only.

Too many people (including, unfortunately, too many downtown merchants) fail to understand that most downtown parking spaces are taken up by all-day parkers who line the curb early in the morning and leave very little space for shoppers. A Philadelphia study found 85% of all curb spaces usually filled by all-day parkers.

Research shows most short-time parkers object to walking much more than 400 feet to where they want to go, but there is no good reason why all-day parkers should feel similarly entitled to leave their cars right next to where they work. This is a problem which many cities are meeting satisfactorily by providing cheap parking at 25¢ or less for all day 800′ from the most congested district and then charging higher rates for parking space close in. A transient can well afford to pay more than 10¢ to park an hour or two, but an 8-hour parker will hesitate to pay 80¢ (10¢ an hour) to save a little walk at the end of his drive.

11. By encouraging private capital into the garage business

Many hundreds of millions of dollars must be invested in off-street parking facilities if the downtown congestion problem is to be solved without imposing more restrictions than the public is likely to tolerate on the use of downtown streets by private automobiles.

All of us hope this money can and will be supplied by private investment for profit without any investment of public funds whatsoever.

But most of us are discouraged by the past failure of private capital to meet the need and question whether, in the future, private investors will be willing to provide more than the most profitable fraction of the necessary space, leaving public investment stuck with the problem of any parking which cannot command premium rentals. And spokesmen for municipal parking authorities feel they need the profit on high rent space for transients to cover their deficits on low rent space for all-day parkers. To this spokesmen for private parking answer:

1. Ninety-eight per cent of all present off-street parking is provided by privately owned facilities;

2. The best postwar record for added off-street parking has been made by cities like Washington, San Francisco, Minneapolis, Oklahoma City and Allentown, Pa., in which all, or almost all, the increase has been provided by private investment encouraged and co-ordinated by municipal cooperation;

3. Private investors can and do get better garages built cheaper, and private negotiation can usually acquire sites cheaper than public condemnation;

4. The threat of competition from publicly owned parking lots and garages subsidized by parking-meter revenue and/or by tax exemption on both their real estate and their bonds has been a major deterrent to private investment in the parking field.

Whatever the merit of these arguments, no city should decide that private capital cannot meet its off-street parking need until it has carefully explored the reasons for private investment's past failure, in the hope that correction of those reasons and perhaps the provision of positive incentives might make private capital ready, willing and eager to provide adequate off-street parking for both transient and all-day parkers.

In most cities there have been two obvious reasons: 1) the price that can be charged has been kept too low by competition from free or almost free parking at the curb; 2) the cost of providing new parking garages has been too high.

In the closing section of our recommendations we shall report evidence that new design, construction, and management methods permit such economies that parking garages now offer a highly profitable field for investment.

The one type of off-street parking facility on which we believe private enterprise will find it hard to compete with publicly owned facilities is fringe parking lots for all-day customers on land too cheap to justify the cost of decking; i.e., land costing less than about $5 a sq. ft. On such lots the city has a great advantage in not having to pay the cost of an attendant, for they can be operated very cheaply with parking meters and an occasional visit from the neighborhood patrolman to make sure the meter charges have been paid. (In these meters it should be possible to deposit enough coins at one time to pay for all-day parking.)

In many cities the large amount of land available for this type of cheap municipal parking will prove a major limitation on the opportunity for profitable parking ramps.

12. By building better roads to and through the downtown section

Almost all of our cities need a wholly new expressway or freeway system. Such a system should include a loop around the downtown business district, and usually an outer loop around the suburban belt, and several radial freeways connecting the two loops and running out into the metropolitan hinterland. In large metropolitan centers as many as four loops and as many as six or eight radials may be needed. Freeways should have modern limited access, uninterrupted flow, and high-speed design characteristics. They should include special design facilities and features for bus or other mass-transit services at terminals and along rights of way.

The national deficiency in modern metropolitan highway systems is so great that many years will be required to build an adequate system. Its cost will run to so many billions of dollars that present gasoline tax revenues will not pay even debt service on these and other highway requirements. An increase in these and other auto-use taxes would help accelerate construction schedules and provide funds for maintenance and control.

The outer rings and outer radials of the urban highway system might well be built first. Right-of-way costs will be less expensive in such areas now than they will be later. Suburban and intercity travel will be facilitated while the necessary adjustments in intracity parking and land use are made. Traffic now going through central areas will be encouraged to by-pass them. Finally, this program will encourage the decentralization to suburban sites of marginal users of downtown property, thus opening the way for the reconstruction of central areas.

After the outer rings and radials of our expressway systems have been completed, and as land use and parking adjustments are made in central areas, the inner radials and rings should be completed. Even with a complete system of modern freeways, however, our central cities will continue to be congested, unless mass transit carries a large proportion of all visitors to central business districts. No highway system can be devised which will serve adequately all the people who desire to drive into high-density downtown areas. This only re-emphasizes the importance of coordinating all plans for parking, highways, land use and transit. It makes essential a readjustment in the prices of downtown highway, parking and transit services.

3. By reducing the cost of parking garages to $1,200 per car

This question is already being answered by many architects and many private-parking garage sponsors. Their answers cover every aspect of cost—construction, land, operation and taxes.

Low construction costs—In many cities first-class multistory ramp parking garages have been built in the last five years for construction costs as low as $900 to $1,200 per car space. Variation in construction costs from one part of the country to another is not enough to explain a city-to-city differential of much more than this $300. If a first-class parking garage can be built in Los Angeles for $900, it should be possible to build a first-class parking garage in any other US city for around $1,200 (about $4.50 a sq. ft. for less than 300 sq. ft. per car).

If bids come in for substantially more than $1,200, either somebody is making too much money on the construction contract, or the design is inefficient, or the garage is being erected on a difficult or inadequate site, or else the building is being overloaded with costly unnecessary requirements, like sprinkler systems, or excessive floor load allowances, or enclosure against the elements, or fireproofing on steel framing. One very important way the city authorities can help solve the parking problem is by cutting out all these costly waste requirements at once.

Parking garages erected at a cost of $3,000 or more per car (and such wasteful and extravagant construction is still common), are not likely to prove profitable for private enterprise at rates low enough to satisfy motorists and so attract customers. But parking garages erected for $1,200 per space can be amortized in 25 years at 5% interest by a constant payment of $7.02 per car space per month. This capital charge is less than 30¢ a working day.

Low land costs—In recent years architects and private garage owners have also found the answer to the high cost of land for downtown garages by reserving the street floor for retail use and getting enough rent from these retail stores to cover most of the ground rent for the entire garage. In Pittsburgh, for example, the public parking authority is getting $30,000 a year rent from its ground-floor retail tenants—a 6% return on the $500,000 cost of the land. Some private operators report even more profitable ground-floor leases.

In this connection four points should be noted carefully:

1. The more valuable the land the higher these retail rents;

2. Even in a highly congested district like the Chicago Loop, two-thirds of the land area is not profitably developed today above the ground floor. The upper stories, if any, are occupied at very low rents by small manufacturing or warehousing operations which could better be conducted elsewhere:

3. Putting first-class retail stores on the ground floor under garages upholds and improves the character of a shopping district, whereas a parking garage with no stores along the street interrupts shopping continuity and creates a dead spot which is bad for all the stores around;

4. The rule of thumb that most of the ground rent burden should be carried by ground-floor tenants is already applied to hotels, office buildings and many other land uses.

Low operating costs—Architects and garage owners are already developing ways to make it easier and more attractive for car owners to drive their own cars up and down the ramps. For example, they are installing escalators in large garages to make access to upper floors easier and more attractive. Most parking garages have a special problem in the number of employees needed to handle cars early in the morning and late in the afternoon. If these peaks can be reduced by such expedients as escalators, much of the remaining labor cost can be recouped from the profits of servicing parked cars during the day.

Labor cost for parking now runs 15¢ per car or more in ramp garages, figuring a $40-a-week employee can average eight cars in and out in an hour.

Low tax costs—We are almost unanimous in recommending that under certain conditions that will protect the public interest, the city should be willing to recognize the parking garage as an extension of the street and as such give it complete or partial tax exemption. Does it make sense that off-street parking should be tax exempt if it is provided by some government agency, but if the same facility is provided by private investment it must expect to make a substantial contribution to the city treasury in taxes, which now consume from one-fourth to one-third of gross revenue of many privately owned garages?

We do not recommend that all off-street parking should be tax exempt. For example, we do not suggest that temporarily vacant lots should be given tax exemption if cars are allowed to park there, though such exemption might be the quickest of all expedients for harnessing the profit motive to provide more off-street parking. Nor do we suggest tax exemption for parking garages unless their location conforms to a well-considered city plan or unless the sponsors: 1) agree to hourly charges which would reflect their tax-exemption savings; 2) obligate themselves to continue the facility for a term of years.

Perhaps a third requirement might be that in return for tax exemption the garage should revert to the city at the end of an appropriate period. This is now the practice in Massachusetts.

Our principal reason for suggesting tax exemption for the privately owned, off-street parking garage is that it must now compete with what is, in effect, municipally subsidized parking at the curb. We believe the equalization of this competition will do much to stimulate private enterprise to enter the parking garage field on a large scale.

We believe that parking garages, erected at a cost of not more than $1,200 per car, and with their ground rent largely covered by the retail development of the street level, should prove one of the most profitable ways by which private enterprise can redevelop large areas of run-down property still left right in the heart of the average business district. And we are pleased to hear that some large insurance companies are showing increased readiness to advance money for such structures.

Photos: Roy Stevens



Photos: Roy Stevens



Hale: *If you provide adequate and safe transportation into the downtown area, the downtown area will save itself.*



Evans: *Selective decentralization is a good thing for these downtown districts.*

Hammond: *You get too much of a ride in a public vehicle for the price you pay today.*



Dulcan: *I didn't build a business downtown to exchange it for a suburban business.*



Mitchell: *There is enough knowledge and experience around this table so that some of our informed guesses might be taken as a hypothesis until the research is completed.*



Fairbank: *There isn't a planner who can make the downtown center survive if the downtown center does not want to.*

Some of the things they said *(excerpts from the forum proceedings)*

Is the center of the city worth saving? If so, how can it be rescued from traffic strangulation?

Prentice: There are a great many things that are now in the center of the city which have no particular reason for being there and which cause congestion.

For example, only about one-third of the ground area of the Chicago Loop is developed above the ground floor. Above the ground floor it is largely given over to light manufacturing, warehouse or storage operations, which could just as well be located elsewhere, but which are generating a considerable traffic problem in the city center.

Hammond: How about having our planners tell us whether or not the centers of our cities should be saved? Some of them may think they should not be saved.

Mitchell: A couple of years ago, in connection with Philadelphia's Planning Commission and the Bureau of Public Roads, we participated in a couple of studies. One, on the nature of the activities in the central district of the city, tried to measure what would be the space requirements of the different kinds of activities over future years so that the planning agency could more accurately determine what sorts of traffic, transportation and other services were necessary for the district. The other survey tried to relate the kinds of activities going on in the city and the amount of traffic, movement of people and goods that take place.

We found that the nonresidential activities within a little less than a two-square-mile area were about equally divided into thirds among manufacturing and wholesaler stocks, retail trade, business and personal services. We found that those activities that are most concerned with movement of goods are decreasing while those activities having to do with the assembly of people are increasing.

It was expected that retailing will, in total volume, stay about the same or increase somewhat. Although many large suburban centers are being established, the center of the city still feeds a very tremendous population that stays in the city. Some of the manufacturing is of a kind that apparently needs to be downtown. There are small enterprises related so closely to each other and to their markets that, of necessity, they have to continue in their present locations.

West: Speaking for the mayors, with all due deference to the honorable planners, there is the little matter of money to run these cities that is quite important, and I think you will find that the money comes from the downtown area. Somewhere near 90% of the money that furnishes all of the city's services comes, directly or indirectly, from the center of the city, the business area of the city, and it is quite important to us to save the centers of the cities.

Howard: With due deference to the cities, if an individual business establishment or industry finds it can do business more efficiently and at greater profit outside the business district of the central part of the city, the city's need for tax income is not going to keep that business there.

Hale: If you provide the adequate and safe transportation facilities into the downtown area, the downtown area will save itself. If it doesn't, it is not worth saving.

Prentice: What sort of activities are functionally appropriate to downtown districts, and what are the trends there that we the people could perhaps do a little about?

Wheaton: It would vary from city to city, but there will be a trend toward increase in office, managerial, financial and other functions which are peculiarly central in their character; a stable and very slow increase in retail functions; and a decline in many miscellaneous functions, including wholesale and manufacturing. The latter cannot compete effectively for business sites and stay, in many cases, for historical reasons. They were justifiably there 50 years ago, but are not able to compete today on equal terms. It is the manufacturing, wholesaling and miscellaneous functions of that sort that will come out.

Evans: Selective decentralization is a good thing for these districts. That is getting the funeral parlors, food stores, drugstores, hardware stores, light industry, etc., outside the central business district as a positive sort of thing other than thinking of decentralization as a loss.

Hamilton: The selection is going to be done by competition. If you can't meet the competition downtown and you can save money by going somewhere else, you are going. If you feel that the added cost of your present location is worth-while to your organization because of the peculiar nature of your function, you are going to stay.

Fairbank: It isn't a question of whether we think the downtown area ought to survive or whether we think we can do anything to make it survive. There isn't a planner in this country who can do anything to make the downtown center survive if the downtown center does not want to. That is a matter of the choice of many people.

Sawyer: It is an American habit to go to the center of the city to do shopping where we can get a greater selection of merchandise. Even though we have decentralized some of the shopping areas, it is still more desirable to shop downtown.

We have a problem of redesigning our cities. We must take into consideration that every American city was built 100, 200 and 300 years ago for horse-drawn vehicles and bicycles, and in 50 years we have dumped over 50 million automobiles on these cities and expect them to carry that load.

If this answer is in elevated sidewalks, or in sunken roadways, or in reclamation of certain areas, or if it means selective decentralization, then we should recommend such improvements over the existing system.



Newman: *The ingrained desire of the US citizen to be able to go from whatever point to whatever point he wants to accounts for the 53 million vehicles on our roads.*

Kelley: *You just can't stop the flow of automotive traffic.*



Hyde: *If the problem is simply one of too many automobiles, why are we trying to solve it by putting more automobiles downtown?*



Wheaton: *We are up against a difficult problem of repricing all urban transportation services.*

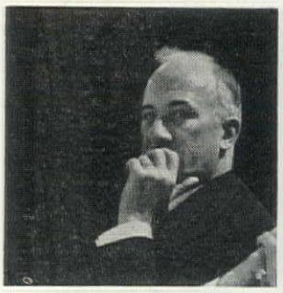


G. Richards: *Every home owner is an automobile owner; he builds his own street and pays for it by assessment.*

Mayor West: *The automobile problem is too many vehicles not hauling enough people.*



Miller: *The man at the curb is being charged a nickel to park on his own property.*



Hansen: *Each business is dependent upon all other businesses for its own prosperity.*

Can the streets handle both parking and traffic? If not, how can the curbs be cleared?

Prentice: Let's talk about private automobiles. Let me start the discussion by asking if the existing street system of the cities would be adequate, except for access purposes, if so many of our existing streets were not used for parking? My impression of New York City is that most of our traffic congestion is due to the fact that we have about 60% of the streets available for vehicles in motion, and the other 40% is dedicated as parking garages.

Blucher: In the interest of research which could be very quickly done, I got on an express bus ten miles from downtown Detroit in the morning rush hour. It cost me 20¢. For the ten miles, I stood. In that ten-mile distance, we passed a considerable number of automobiles headed downtown, and a considerable number of automobiles passed us. In that ten-mile distance, there were exactly eight automobiles that carried more than the driver.

I give you that illustration merely to point out that if we are going to encourage that kind of a driving pattern, then the existing streets, even without parking, will not be adequate to handle the cars that want to use them.

Wheaton: In almost every city, at least half of the people now going into the business district go by mass transit, and presumably, of that half, another half, or 25% of the whole, would drive if the streets were not congested. If you add that volume of automobiles to almost any street system, your downtown district blows up.

Clark: You can't discuss parking requirements of a city without considering whether the access highways should be designed to bring in more people or less people. The demand on your streets for moving traffic and the demand for off-street parking facilities depends a good deal on whether there is a policy of encouraging or discouraging people from bringing their cars into the city. I do not see how you can divorce the two questions.

Prentice: We have to consider the question of why he wants to use his private car.

Hale: I think that is exactly right.

Prentice: One of the reasons he wants to use his car is because he has no idea of what it costs him to use it.

Newman: I disagree with you wholeheartedly. I do not think it is that kind of thinking that built up 53 million vehicles which we have on our roads today. It is the convenience of movement and the ingrained desire of the American citizen to be able to go to whatever point from whatever point he wants.

I hope we never reach the day that some of these planners seem to be implying, that some great power is going to lay down the law that you may not come into the downtown area unless there are three or more people in a car.

Blucher: May I have a minute for rebuttal? You do not have to worry about Congress tak-

continued on p. 162

Where does the taxi fit in the pattern of transportation?

How does it fare compared with busses and trolleys?

Sawyer: It may be refreshing to note that the taxicab industry is not looking for subsidy. I have some astonishing figures for you, and I think you will be very interested when you hear them.

In 1951, taxicabs carried 1,577,781,044 passengers or an increase of 13.42% over 1946, while the motor busses carried 7,438,000,000 or an increase of 3%, as compared with 1946.

Prentice: Are you telling me taxis carried a fifth as many passengers as busses?

Sawyer: That's about right.

Streetcars carried 2,171,000,000 passengers in 1951 as compared with 6,867,860,000 in 1946, or a decrease of 68.3%.

Rapid transit carried 2,041,000,000 in 1951, or an increase of 19% as compared with 1946.

Trolley coaches carried 1,231,000,000 in 1951, an increase of 35.3% as compared with 1946, which would indicate that the trolley coaches are becoming the most popular of the mass transportation carriers.

Taxicabs took in $881,841,464 in gross revenues: or an increase of 81.5% as compared with 1946.

McGavin: No wonder you don't want a subsidy.

Mitchell: We understand the taxis are not subsidized, but do you know what proportion of the amount they got was paid for out of expense accounts? [Laughter.]

Sawyer: Here is a complete tabulation of these figures and the trends since 1946:

Public transportation methods compared—1951 and trends since 1946

	Passengers in millions	*Units operated*	*Miles traveled in millions*	*Gross revenues in millions*
Taxis	1,578+13%	78,764+ 57%	4,877+79%	$882+ 82%
Busses	7,438+ 3	57,660+ 25	1,893+18	789+ 60
Streetcars	2,171—68	10,960— 60	388+57	284— 41
Rapid transit	2,041+19	9,644— 6	424— 9	207+ 43
Trolley coaches	1,231+35	7,074+106	209+71	130+131





GARAGES GROW UP:

Once the ugly ducklings of commercial building, they put o

In the history of building, 1953 may well go down as the "Garage Year," for at long last action is replacing talk about off-street parking facilities.

Item: more public money will be spent on garages this year than ever before: Denver, $4 million; Chicago, $21 million; Hartford, $2.9 million; Philadelphia, $7 million.

Item: private capital entering the garage field will top $75 million compared with $15 million in 1952, according to the newly formed National Parking Assn.

Item: more new office buildings will provide parking space for tenants than ever before: a Denver building, 400 spaces; a New Orleans building, 800 spaces; one in Hartford, 200; and another in Atlanta, 250.

Item: mechanical garages, largely experimental a year ago, have begun to pay off. The Bowser system (p. 139), for example, will go into two new buildings in Denver, two in Houston, one in Mexico City. One large store has shelved expansion plans for its ramp garage to study an even more advanced mechanical garage.

LIFE



What is the quickest way to double a parking lot? *(p. 122)*

How have building-code changes in Los Angeles, Washington and Minneapolis lowered garage costs? *(p. 130)*

How far from his destination will a motorist park? *(p. 126)*

Why is the sixth level the top limit for ramp garages? *(p. 128)*

Why should mid-city garages be based on built-in retail space? *(p. 128)*

How to build a top-notch garage for only $960 a stall *(p. 134)*

How does the world's largest garage entice motorists up its three-story ramps? *(p. 132)*

Why is 105′ the dividing line between ramp and mechanical garages? *(p. 126)*

How does a 2 h.p. motor make a whole garage floor revolve? *(p. 140)*

How can you park 68 cars on 1,700 sq. ft. of ground space? *(p. 137)*

"A few architects have been designing garages and parking terminals but the surface has barely been scratched . . . millions of dollars will be spent on off-street facilities in the years to come."—AIA BULLETIN



The Editors acknowledge the assistance of CHARLES T. MCGAVIN, *authority on off-street parking, in the preparation of this article.*



the architectural dog, start ringing up profits as they help clear crammed city streets

Today's garage boom springs from the fact that more people have more cars, sending car registration up to 43.9 million in 1952 from 29.5 million in 1941. Result: increased traffic pressure on inadequate city streets.

While few experts think cities will actually die of traffic strangulation, many fear that productivity of mid-city areas will fail to keep pace with rising taxes, wages and other business costs. The problem: how to make it easier for more people to drive to the city's center to shop or transact business and thus stimulate downtown productivity.

Signs of pain

As traffic pressure mounts, more and more symptoms of internal disorder become apparent:

- Fear of less tax revenue from falling real estate values (a condition that has not actually appeared) has prompted Realtor William Zeckendorf to call for absorption of commuting towns around New York into the city's tax structure.
- Several large businesses in Manhattan have pined so for traffic-free suburbia they have given up desirable central locations, moved bag and baggage to greenbelt areas.
- Shopping centers have sprouted in suburban areas. Some experts claim they result from muddled city traffic; others describe them as part of the sheer growth of cities. Best bet: a combination of both.
- More and more cities have had to enter the parking field. Today, nearly half of all US cities over 10,000 population are running parking lots; a dozen operate garages.
- To encourage turnover at the curb, parking meters have been installed throughout the US. More important for the garage industry, the public has accepted the idea that it can no longer park free in the downtown district.

More garages: curse or blessing?

All these facts feed the garage boom. Although garage rates are higher than meter rates, the shortage of curb space in nearly every city center fills garages. Will more garages attract still more cars to mid-city areas and produce still more congestion? Not if other measures are taken, such as modernizing mass transit, prohibiting curb parking, regulating truck movement.

In any event, because they are needed and profitable, more and more garages will be built.





1916 Ford *boasted small turning radius for use in "crowded thoroughfares."*



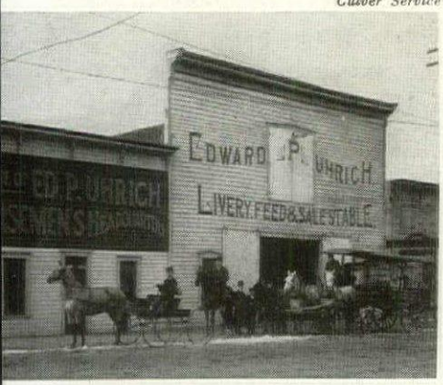
1933 Cage Garage *(Boston) pioneered open decks.*

EVOLUTION

of the modern parking garage

Today's parking garage had an unfortunate ancestor, one that passed its sins on to its progeny so that even today garages are considered social affronts in grade-A locations. The ancestor, of course, was the livery stable and the reasons for its low esteem are obvious. As cries of "get a horse" faded from the US vocabulary, many stables were converted into garages.

Culver Service



In 1916, for example, New York City zoning laws classed garages with stables. From the use of stables as garages came the idea that a garage could be any type of building. Result: more and more loft buildings were turned into garages in second-rate areas.*

First important improvement on the converted building garage came in Boston in 1933 when garage owner Sam Eliot asked himself an important question: Why enclose a building full of cars and then have to spend money ventilating it? There was no logical answer, so he built the Cage Garage, first open-deck garage in the US and still in profitable operation.

Like many a radical innovation, the first open-deck garage did not find immediate acceptance, and three years passed before the second open-deck garage was built by Kaufman's department store in Pittsburgh. Better designed than its predecessor, the Kaufman garage set the pace for open-deck ramp garages for the next decade.

Meanwhile a new garage type was created. In various and often bizarre forms (right and p. 136) the automatic or semi-automatic elevator garage began to emerge. As early as 1937 Westinghouse experimented with a mechanical garage that operated on the principle of a Ferris wheel. Cars slung in special racks were raised up one side of a steel frame structure, passed across the top and lowered down the other side. This and similar experiments proved impractical and, for the time being, efforts to develop a truly mechanical garage got nowhere.

As ramp garages gained favor they moved closer and closer to the heart of retail centers—and closer to a major hurdle. In many cases as much as a block of perfectly good retail space would be devoted exclusively to parking and this tended to destroy the retail character of the neighborhood. To preserve essential retail continuity as well as for more direct economic reasons (p. 128) garages began leasing ground-floor space to retail shops and restaurants. One of the simplest solutions to this problem is found in an unpretentious parking lot in Dayton. Show windows of the adjacent store simply extend across its front, leaving only enough space for an entrance to the lot.



Old buildings *like this became makeshift garages.*

Even stables *were used as garages*



For many years codes forced garage builders to fireproof their steel at considerable expense. Fortunately the fire record in garages has been so good that, today, cities have begun to relax codes, permitting garages of exposed steel. Best example: the Medical Center garage in Beverly Hill (right). Cleanly designed, it is built of demountable modular steel units so that if the land is required for another use, the garage can be taken down, moved and re-erected without scrapping expensive steel.

More modest in scope is a design by Engineer Hewitt Wells in Washington, D. C. His demountable modular steel units can be moved onto a parking lot and put up to increase its capacity at a cost of $3 to $3.50 per sq. ft. Time required: one week for an average lot. Architectural treatment of the spandrel areas can be as simple or elaborate as desired.

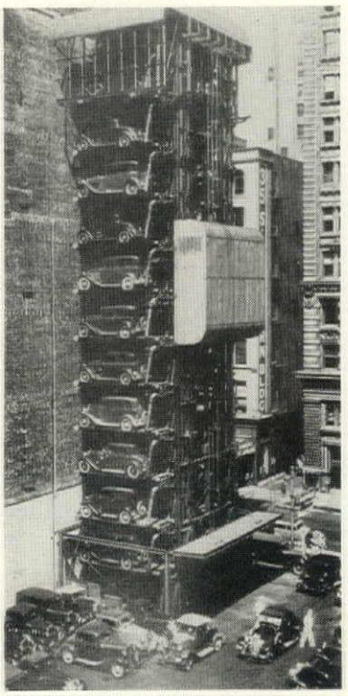
Latest development in concrete garages is lift-slab construction. A project of this kind for Louisville went out for bids last month.

Improved mechanical garages are finding increased acceptance. Today, three types are in operation, two of which are fully automatic (see p. 136). These pioneering successes are profitable operations that have broken the jinx surrounding the development of mechanized garage.

* Even today the garage still suffers from its lowly origin: Four projected mid-Manhattan garages—which could supply 785 much-needed parking places—have met opposition by nearby New Yorkers. Gist of their protest: the garages were unnecessary, would bring noise and gasoline fumes into the area.



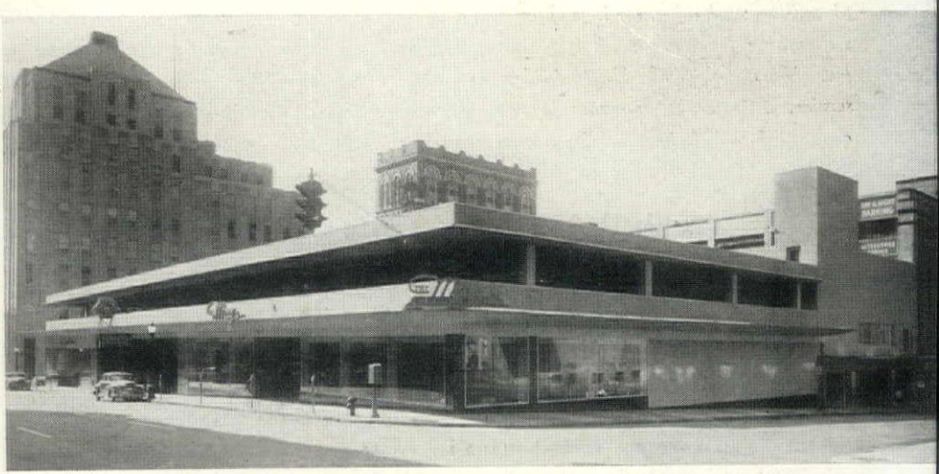
Second open-deck garage *was built by Kaufman's (Pittsburgh) in 1936 Architect: William Hoover*



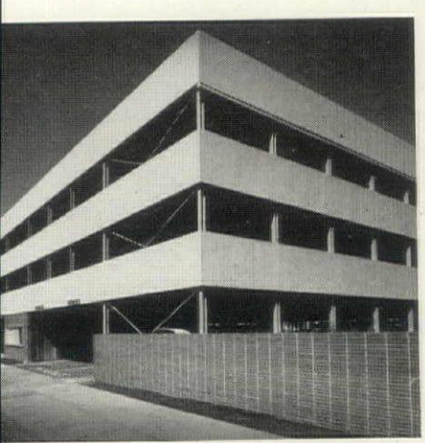
Pioneer mechanical garage *put up by Westinghouse in 1937 was complex, proved impractical.*



Show windows *across front of Dayton parking-lot help preserve street's retail character.*



Retail continuity *of whole block is preserved by ground-floor shops of this Richmond garage. Architect: Carneal & Johnston; Consultant: Ramp Bldgs. Corp.*

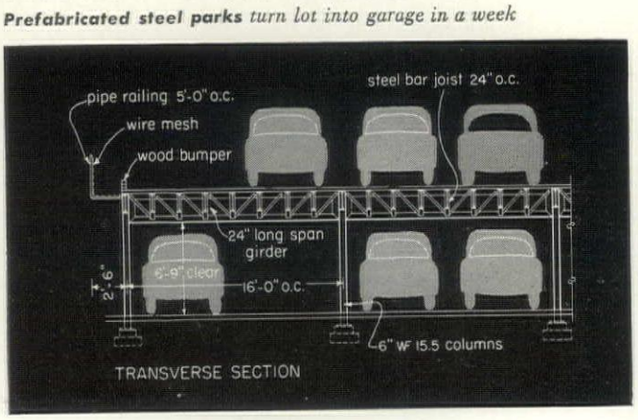


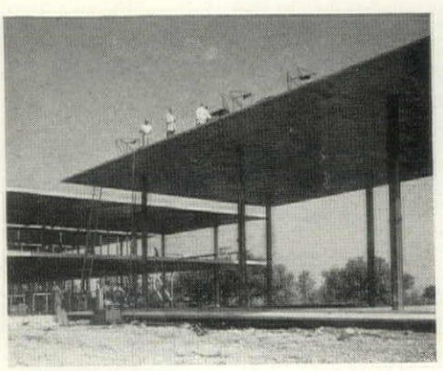
Modular steel units *form Beverly Hills garage Architect: Pereira-Luckman. (AF, March, '52)*



Lift slab *Technique (below) may be used for Louisville garage (above). Consultant: Ramp Bldgs. Corp. Architect: Nevin & Morgan.*

Prefabricated steel parks *turn lot into garage in a week*





Photos: Acme; Dementi Studio; Julius Shulman; Ulric Meisel





Photos: Ray Mainwaring

Public garage *in Bridgeport, Conn., built on $1 million work of ground, pays no taxes, offers self-parking for 500 cars at low rate of 25¢ for four hours, 5¢ each additional hour as public service. Private lot operators in midtown area cannot offer such low rates, pay taxes on their land and still profit. Building cost: $2,500 per car stall. Over half capacity is sold on monthly basis; remainder is for shopper parking. Part of lower floor provides bus stop, public waiting room. Facilities are lush with 10' high floors, a 24' high ground floor, concrete grillwork on exterior walls (which could have been left completely open), long straight ramps, moving stairs between all floors. City raised $1.25 million for garage with bonds. Any deficit would be made up from general tax revenues from garage users and non-users alike. Architects: Lindsay & Johnson.*

PUBLIC vs. PRIVATE

Profits for both city and garage operator lie in cooperation

Today's new garages range from wholly municipal projects to those developed entirely by private enterprise. At one extreme are Evanston, Ill., which has used its parking meter revenues to provide 11 parking lots, and Grand Rapids, where the parking authority has issued bonds to build and operate three garages. At the other extreme is Indianapolis. After years of fruitless discussion over whether the city or private enterprise should build garages, businessmen got together and built the first project, a 577-car garage.

Between these two extremes is Baltimore where public and private interests cooperate. The city has made $15 million available for 2½% loans to private enterprise for garage construction. In New Brunswick, N. J., this situation was reversed. Both public and private interests recognized the need for parking. Businessmen agreed to buy 300,000 of noninterest-bearing bonds from the city parking authority so it could acquire and construct three parking lots.

The public vs. private argument about the development of off-street parking facilities runs like this:

Public: Off-street parking facilities are a natural extension of the city's street system.

Private: Such logic would lead to the claim that driveways, service stations and even hotels are natural extensions of the street and sidewalk system—and are therefore subject to public control.

Public: The parking problem is so tangled with mass transit, through-way development and truck movement that a centralized control is necessary to bring order from chaos—and only the city can supply that control.

Private: Certainly the city should develop an over-all plan for traffic movement and parking but it does not follow that the city should go into the parking business.

Public: Where parking demand is great the city can use its power of eminent domain to acquire necessary sites denied private buyers.

Private: —And usually pay through the nose in the process. In many cases, acquiring sites through eminent domain costs more than private negotiation because a property owner threatened with city action will put a premium price on his property which must be paid or fought expensively in the courts to be reduced. In only extreme instances is use of eminent domain justified.

Public: Without the profit motive we can offer lower rates to the public.

Private: You mean without the tax problem. Not having to pay taxes is what makes lower rates possible.

Public: Revenue from city garages will retire bonds so the projects will not cost the public a cent.

Private: But curb parking-meter revenues often must be put behind the bonds or they don't get sold. Then meter revenues are not available for use elsewhere in the city budget. It will cost the taxpayer in any event because the city garage removes tax revenue producing property from the city's lists. In particular it costs the taxpayer who does not own a car or who does not use the municipal parking garage. Nearby merchants benefit from municipal garages at the expense of more distant—though equally taxed—businesses. Are you going to build garages for everyone or, to keep matters fair, reduce the taxes of merchants who do not benefit from municipal parking facilities?



Private garage *of J. L. Hudson Co. in Detroit takes whole city block (54,000 sq. ft.). Though not built with maximum economy (cost: $1.5 million) it nonetheless parks 850 cars at a cost of $1,765 per car stall. Rates are comparable to competing lots and garages: 30¢ first hour, 10¢ each additional hour; yet they are not so high as to discourage shopper parking. Income from lease of 14 retail shops on ground floor goes far to pay land cost—taxes from which augment city revenue. In addition, the shops preserve the retail character of the mid-city location. Cars are parked by attendants. Banked ramps and man-lifts help raise turnover to nearly three. Six entrances feed cars in from one street, three exits discharge them on another. In rush-closing hours, three of six entrance lanes can be turned to exits, speed departing customers. Designed by Ramp Bldgs. Corp.*

Public: Municipal garages would insure permanence of off-street parking space where it is needed most. Private interests might later convert a garage site to other purposes.

Private: City administrations change and adopt different policies. A new administration might decide to do something else with the site, too.

Results of cooperation

However heated the argument becomes, proponents of both public and private garaging agree that true cooperation can produce more results than continued warfare. Here is a striking example that shows effects of cooperation: In Washington, D. C., the parking commission has surveyed traffic trends, charted parking demand, helped acquire sites, and encouraged private investment in off-street facilities. Through the parking commission's efforts, 22 changes were made in building codes so private garages could cut costs, provide up-to-date garages. (Chief changes: elimination of exterior walls, reduction in sprinkling and ventilating system requirements.) Result: a net gain of 20,600 spaces in six years. No city with a public parking authority which considers all off-street projects to be within the government's domain and makes little real effort to encourage development has challenged that record.

Profits for private investment

The history of the garage business until the end of World War II has not been one to make cautious investors take the plunge. In the Thirties, haphazard location, costly building (partially demanded by unrealistic building codes) forced many garage ventures into bankruptcy.

Since the war, however, expert analysis of parking demand, careful attention to garage location and more economical garage design have turned the garage business into a profitable industry.

Allentown, Pa. is an outstanding example of how private interests—the retail merchants of the city—have not only solved the city's downtown parking problem but also created a profitable business. Called "Park & Shop," their organization today operates lots with space to park 1,200 cars. Last year Park & Shop made a profit of $26,000—which is only the direct profit; indirectly the 82 merchants in the organization have made much more in increased retail sales which have risen over 60% since 1945. And, with easier parking in Allentown, no suburban shopping centers have mushroomed.

Below is a table summarizing the operating costs and profits of four typical garages serving different kinds of parkers and charging different rates.

OPERATING COSTS AND PROFITS
per month per car space in typical garages

Type patronage *	Capacity	Rate structure	Gross revenue	Operating cost	Interest, amort. 4% 25 yrs.	Profit
90% Short-time	300	20¢—1hr. 10¢ ea. ½ hr.	$24.70	$14.85	$4.25	$5.55
70% Short-time	500	25¢—1 hr. 15¢ ea. add'l $18/month	22.55	14.60	5.50	2.45
50% Short-time	350	35¢—1 hr. 15¢ ea. add'l $25/month	36.90	25.40	5.25	6.25
30% Short-time	350	35¢—1 hr. 15¢ ea. add'l $22/month	33.30	20.90	4.70	7.70

* *Balance of percentage in each case represents all-day parkers*

LOCATION

Where to site a garage and how the site affects design

It has taken 20 years, a depression-inspired collapse of the garage business and today's bumper-to-bumper congestion to prove that location is the key to success or failure of garage operation:

- Location determines the type of garage to be built.
- Location determines, to a great extent, the rate structure.
- Location determines the type of parker drawn to the garage.
- But what determines location?

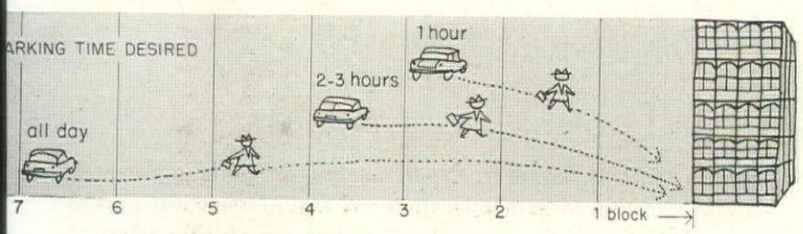
Three recent surveys help answer the site question:

1. A survey by the American Automobile Assn. documents the desire of drivers on brief errands to park correspondingly close to their destination (see chart). How strong is that demand? Strong enough to make them cruise for five or ten minutes looking for a place to park within two blocks of their goal.

2. A private study of parking habits in five mid-Manhattan garages reveals this parking-time pattern:

0-1 HRS.	1-2 HRS.	2-3 HRS.	3-4 HRS.	4-5 HRS.	OVER 5 HRS.
11%	25.6%	21.7%	17.7%	10.8%	13.1%

3. Cleveland's recent block-by-block parking survey analyzes parking demand versus supply (see map). Although the downtown area as a whole shows an actual surplus of parking space, all this surplus is too far out for short-time parkers.



Walking distance *in relation to parking time is shown in AAA study*

These statistics suggest 1) that garages in high-demand areas should have higher rates and cater exclusively to short-time parking; 2) that fringe-area lots and garages should have a lower rate structure designed to attract the all-day parker; and 3) that . . .

Garage type is determined by location

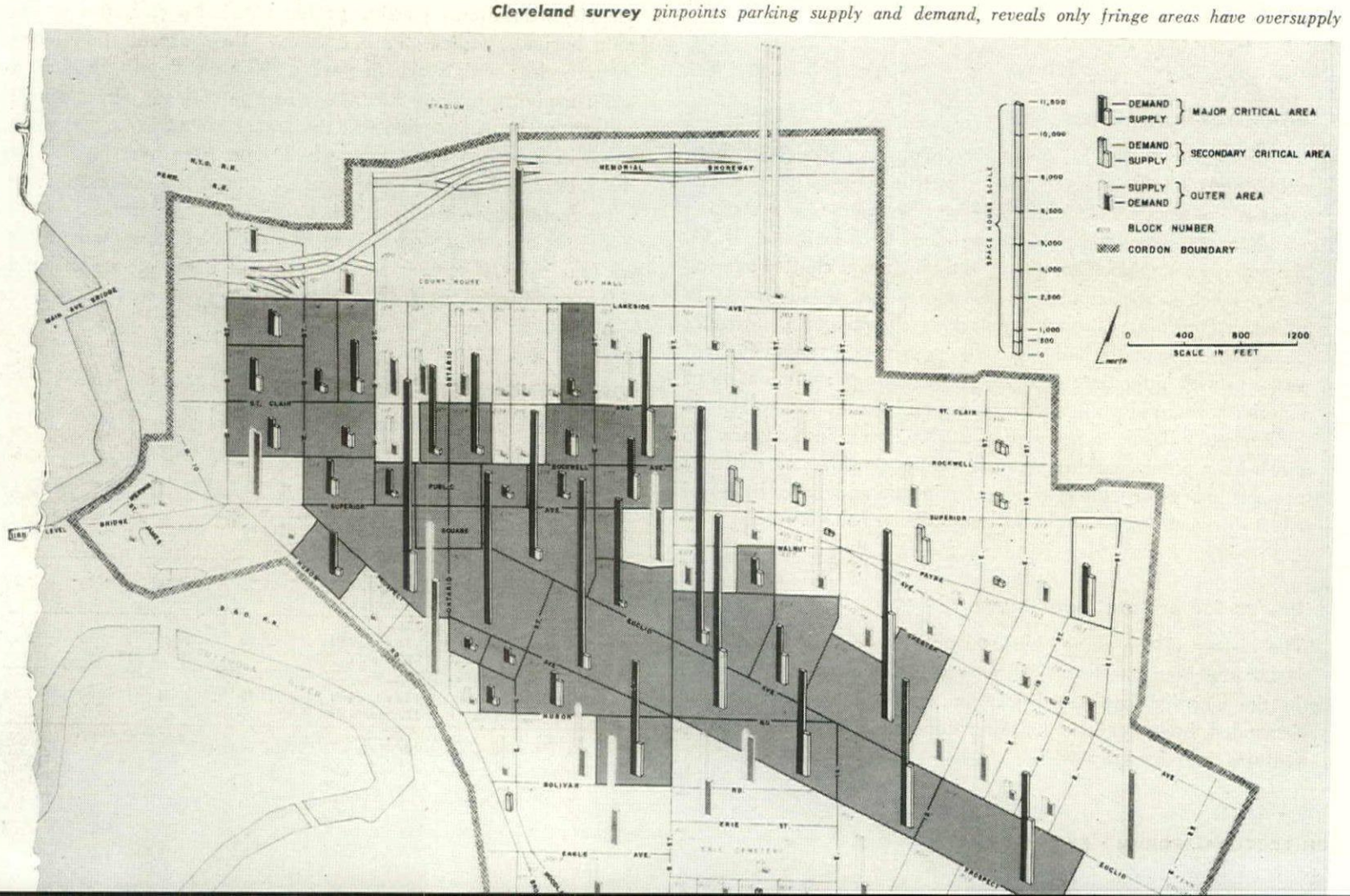
There are two general garage types: ramp and mechanical. A choice is influenced by the location, size and cost of the lot.

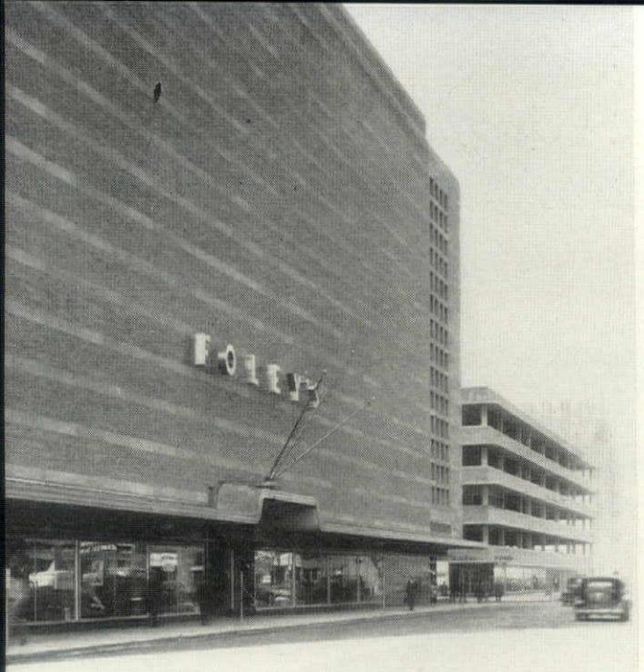
Mechanical garages use elevators and dollies to stack cars up as many as 20 levels on sites as small as 24′ x 24′. Frontages required for mechanical types range from 24′ to 100′. Hence this type garage can go where sites are scarce, small and expensive.

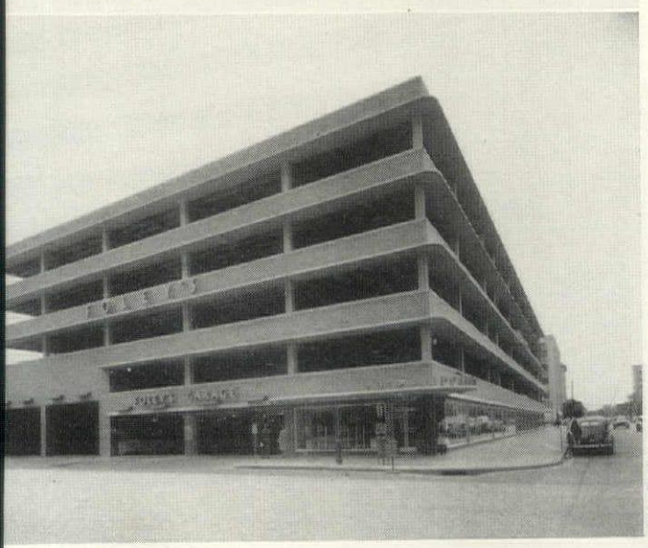
Ramp garages are of four types: straight ramp, staggered floor or split ramp, spiral ramp and sloped floor. Of these the staggered floor takes the least frontage to park a profitable number of cars. This minimum frontage is 105′—just about where mechanical garages stop. In this system, floors in one section of the garage are offset half a level to cut ramp lengths in half. Even so, staggered floor ramps of 10% slope run 34′. With an 18′ aisle on each level plus an 18′ row of cars beyond each aisle, the total distance is 106′. Stalls can be squeezed to 17′6″ which leaves 105′ frontage needed for this type garage. A straight ramp type with floors extending unbroken from wall to wall would take twice the ramping length and would bring the frontage requirements up to 140′ with no increase in capacity. Spiral ramps can be used to reduce this 140′ requirement but parking space is sacrificed as the center of the circular ramp is inaccessible. Sloped-floor garages turn the whole floor—including parking spaces—into a ramp that corkscrews up in rectangular sections to the roof. The necessarily gentle slope takes more frontage than a short-run ramp.

Since ramps of all types require more land than mechanicals, their greatest usefulness is in the center of cities of under 200,000 population or outside big-city business centers.

Cleveland survey *pinpoints parking supply and demand, reveals only fringe areas have oversupply*

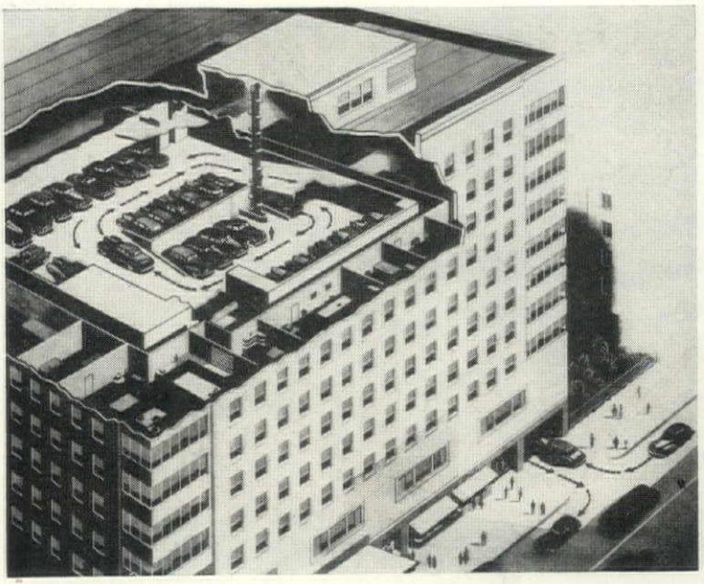




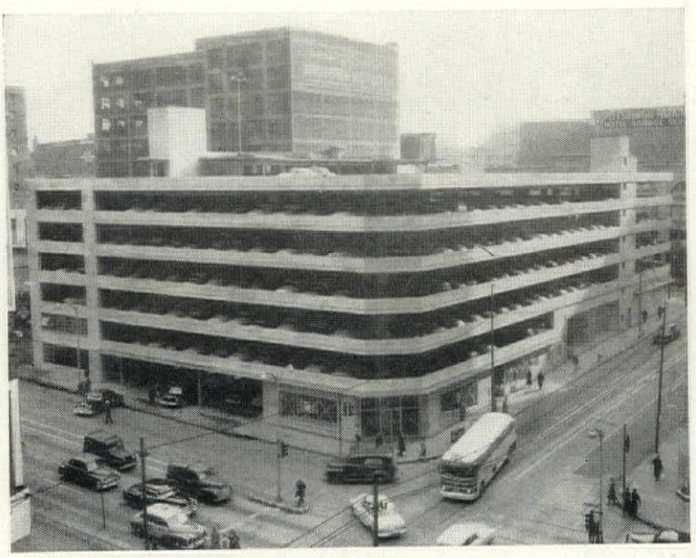


Bob Bailey

Captive garage *attracts customers to Foley's department store in Houston. Located across street from store, garage operates only secondarily for profit. Architect: Kenneth Franzheim. Consultant: Ramp Bldgs. Corp.*



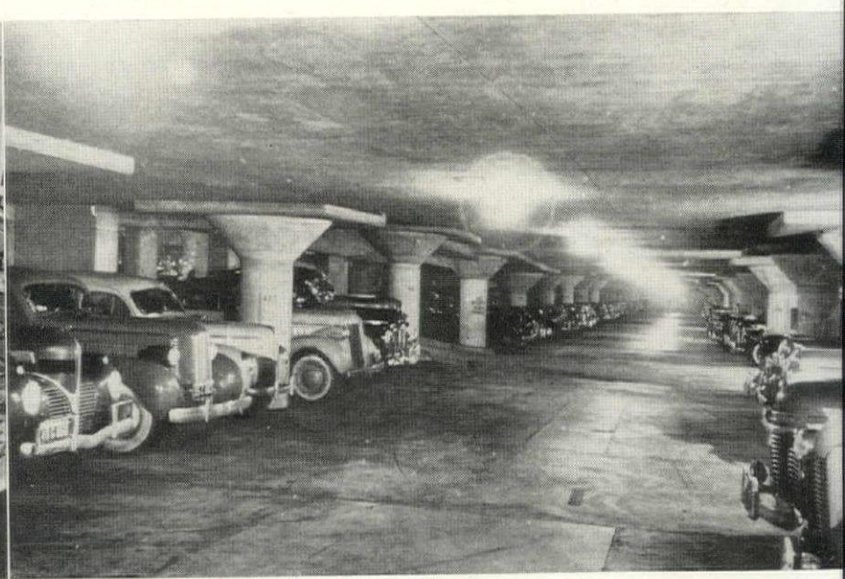
Built-in garage *is featured in Washington's Cafritz Building. Sloped-floor garage occupies largely unrentable interior space, is designed for tenants and their clients who step from their cars to surrounding offices. Architect: Le Roy L. Warner.*



Independent garage *in mid-Pittsburgh serves a large retail area. On expensive land, it might more economically have been a mechanical type. Architect: Hoffman & Crumpton; consultant: Ramp Bldgs. Corp.*

Underground garage *at Union Square, San Francisco is expensive, needs subsidy to be feasible. Note heavy columns to hold up earth for park. Architect: T. L. Pfleuger.*

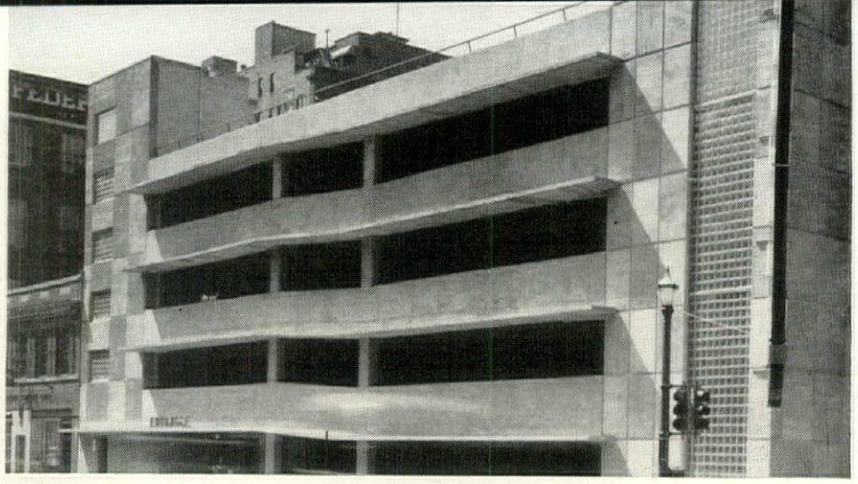




Art Streib Studios

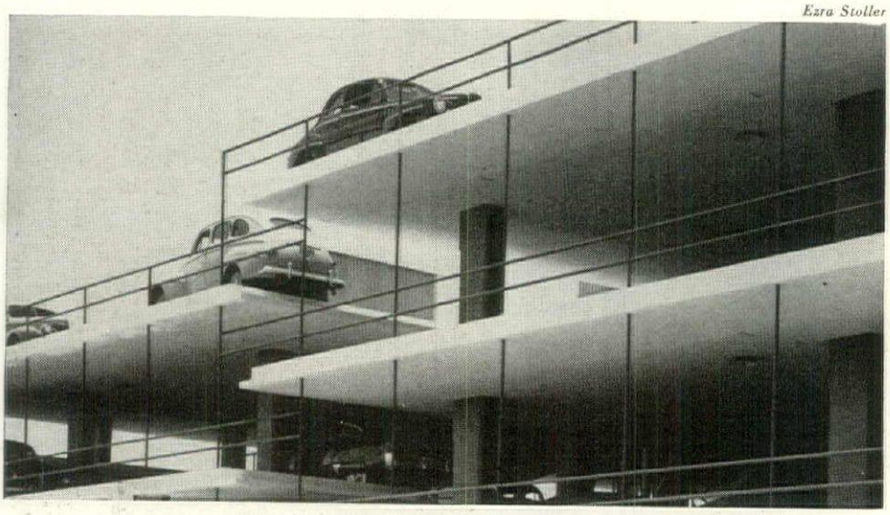


1. Six levels *is top ramp limit. General Petroleum Garage, Los Angeles. Architect: Wurdeman & Becket.*

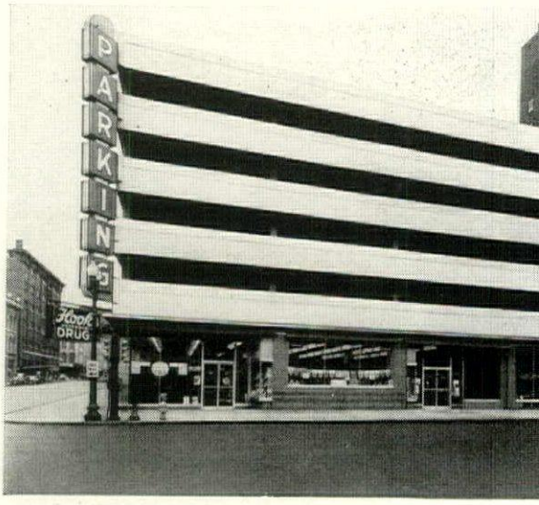


4. Sloped-floor garage *by Ramp Bldgs Corp. with architect J & G Daverman Co. provides customer parking in Grand Rapids, Mich.*

Ezra Stoller



2. & 3. Open decks, staggered floors *mark Miami garage by Architect Robert L. Weed as advanced design.*



5. Ground-floor shops *in Indianapolis garage maintain street's character, help pay land costs. Designed by Ramp Bldgs. Corp.*

DESIGN Eleven check points for better garages

Mechanical garages, by their nature, have fixed plans that admit little rearrangement or selection of interior elements. Ramp garages, however, are as varied as the traffic conditions, street systems, site dimensions and operating methods to which they must conform. No two garages are identical since no two have to meet exactly the same conditions. Yet each successful garage design can teach something to all garage designers. Here, keyed to the photos above, are check points and ideas from today's best garages:

1. Six levels above the ground floor mark the upper practicable limit in ramp-garage development. Two operating details have determined this limit: 1) From higher floors cars cannot be delivered fast enough during rush hours; 2) In self-park operations customers balk at driving up a ramp system, however well laid out, beyond a sixth level. While it has sometimes proved profitable to use basement space for parking, the cost of going farther down to a sub-basement generally exceeds the gains.

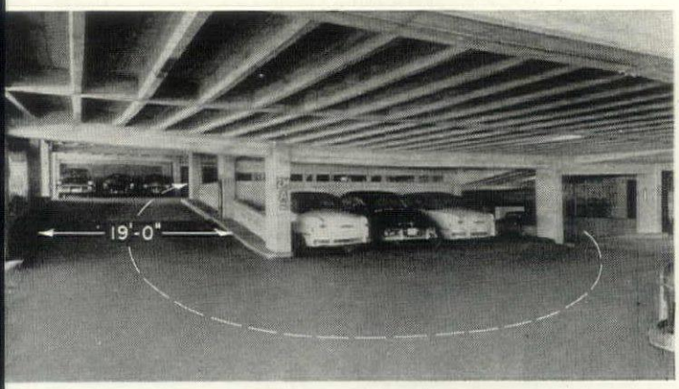
2. Open decks, by eliminating walls and windows, obviously save money in construction, ventilation and maintenance. And in customer-park operations there is less resistance to driving up open-deck garage ramps than to maneuvering in closed buildings. (Probable reason: claustrophobic.) Trouble from snow in northern locations has not materialized. Says one northern garage operator: "The cars themselves bring in more snow than blows in."

3. Staggered floor levels waste a minimum of space on ramps. Pitched at 10% they require only 34′ of horizontal space (two car lengths) for the ramps themselves, compared with 68′ for a straight ramp system of the same slope. Less frontage is required for a given capacity garage in this system than any other.

4. Sloping floors comprise the most efficient ramping system for customer-park operations. In this system, the whole floor *is* the ramp. Cars are parked all the way up on both sides of the aisleway. The slope is so gentle (about 4%) that customers parking their own cars hardly realize they are circling upward.

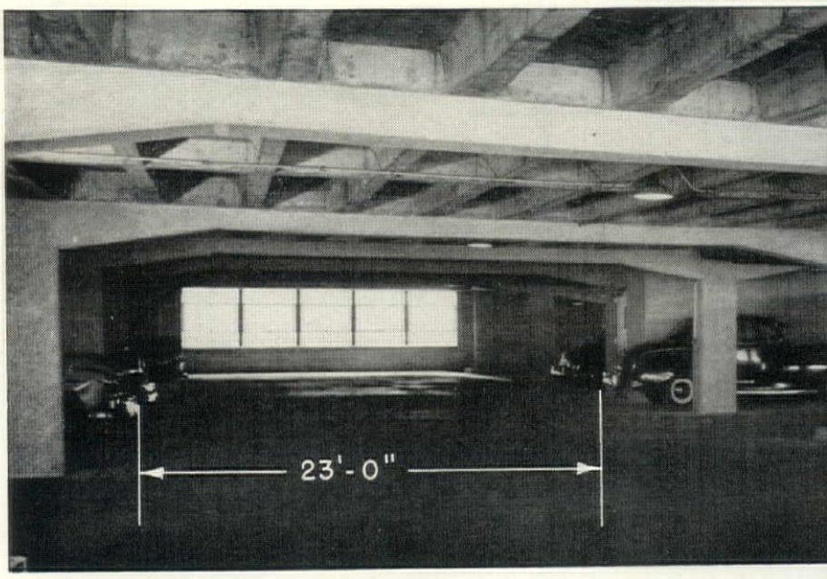
5. Ground-floor shops have become almost a necessity to defray high mid-city land costs. Where the land is leased rather than bought, ground-floor rentals may more than pay for the land —letting the garage itself operate rent free.

Ground-floor development, in fact, can mean the difference between life and death for a garage venture. Studies for a projected municipal garage in one large eastern city showed that,



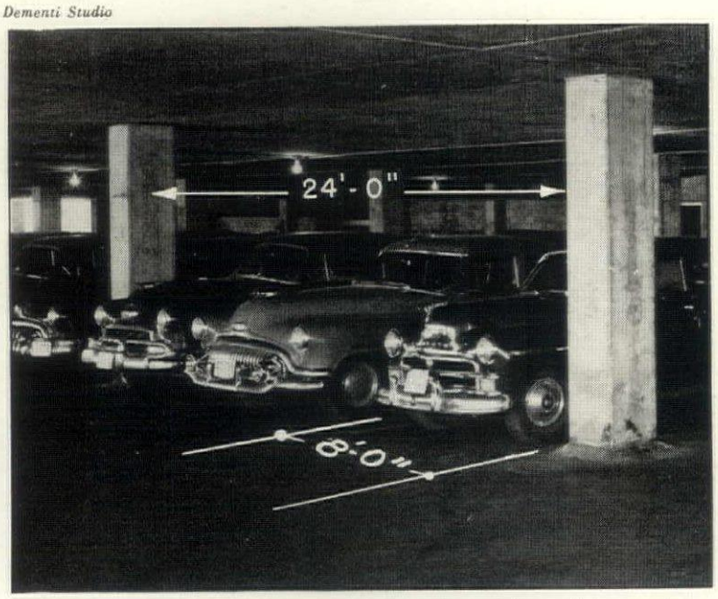
7. Ramps *should be wide enough to permit parking either by customers or attendants.*

Vern Thompson

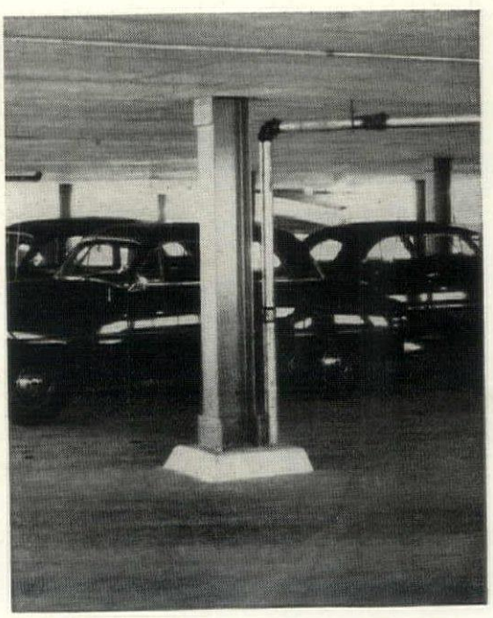


8. Aisle width *affects efficiency of operation*

Dementi Studio



9. Three stalls per bay *is normal basis for determining column spacing*



11. Curbs *around column bases safeguard cars*

unless store space was built (at twice the cost of garage space) and leased, the operation would not show a reasonable profit. Since the city could not rent space under current law, the project was abandoned.

6. Heated ramps are particularly worth-while in self-park garages in the North. During winter months cars bring in ice, snow and slush which is apt to drop off and freeze to entrance ramps. Open-deck garages are never heated and their ramps are subject to the danger of icing. One of the first garages to use heated ramps is Bridgeport's expensive self-park municipal garage (see p. 124).

7. Ramp widths should be wide enough to permit either attendant or customer parking without alteration to the building. Ramps wide enough for safe customer parking will also speed up attendant parking and increase turnover. Optimum single-lane ramp width in staggered floor garages is 19′, but in spiral-ramp garages a one-way ramp width of 13′ is sufficient.

8. Aisle widths, like ramp widths, are best fixed to handle both customer and attendant parking. Although attendant-parking garages can have aisles as narrow as 18′, best practice is to make aisles in straight or split-ramp garages a safe 23′. (Where site conditions make it necessary, aisle width can be traded for more stall width.) In sloped floor garages, a two-way 26′ width is used.

9. Bays and stall widths are interdependent. Normally, with a 2′ column, bays can be as narrow as 26′ and still provide three 8′ stalls. To allow space for opening doors, the two cars in the outside stalls hug the columns, use the 2′ column space for door opening. This leaves ample space for opening the door to the center car in each bay.

10. Elevators should be installed in self-park garages over three levels above ground. Expense of moving stairs is apparently not justified since they rarely operate at capacity. Man-lifts to carry employees between floors consist of little more than hand and foot rests on vertically moving endless belts.

11. Curbs around columns, not yet proved necessary, may well become common as more and more ramp garages find customer parking pays better than attendant parking. These curbs prevent drivers from scraping their cars on columns, reduce damage suits against the garage.

CONSTRUCTION

How to lower garage costs

In the face of constantly rising building costs, more and more thinking in garage design is directed at the economics of the structure. Here are the ways in which garage costs are being lowered:

Building codes in most cities add unnecessary cost to garages—as they do to most building types. In cities like Washington, Los Angeles and Minneapolis, however, codes have been revised—after much struggle—to permit intelligent economies. Among them: elimination of ventilating systems in open-deck garages, use of exposed steel, elimination of sprinkler systems (except in basement or gas-sale areas), lower floor-loading requirements, reduced ceiling heights.

Exterior walls have been reduced nearly to the vanishing point with nothing left except a curb and metal guard rail around the floor slab edge (right). Where standard steel construction is used, spandrel facings are made of light metal extending to the top of the guard rail. Masonry facing for spandrels can be much more expensive than the admittedly higher installation cost. Reason: bumpers hitting the masonry guard rails loosen it, requiring expensive maintenance.

Flat slab floors in place of standard fireproofed steel construction reduce costs. With the now-standard 7′ floor to ceiling height, flat floor slabs bring the floor-to-floor height down from 9′-6″ to 7′-6″—a 2′ saving in each level. Floor loading requirements, which in many cities range from 75 to 150 psf or more, can keep savings from flat slab-floor construction from being realized. However, with tightly written specifications, flat slabs with a 50 psf loading can be safely used. (Pan or troffer construction with that loading *cannot* be used.) Cracks appearing in some slab floors in northern climates have permitted winter slush with its de-icing salt to drip through to damage cars below. Use of air-entrained concrete and thicker slabs eliminates this nuisance.

Exposed steel garages have the advantage of being demountable and salvageable and are worth consideration for garages on leased land. Steel floors have the disadvantage of letting water drip on cars below. Fire insurance rates are higher for exposed steel but since insurance costs are a very small part of operational expenses, the higher rate is not a major drawback.

Low bridge. One construction trick used in a Midwest garage produced an indirect economy. Entrances were designed with 7′ clearance so no trucks or busses could enter the garage. This guaranteed that the garage could store only private cars and the insurance company allowed a substantial rate reduction. Reason: heavy trucks—especially those with unknown and possibly flammable contents—are a greater hazard than cars.

The not inconsiderable cost of replacing extended aerials broken in low-ceiling garages could be materially reduced by placing a trip wire 7′ above the garage entrance. It could activate a squawk box and alert attendants before the damage was done.

Yesterday's garage, *like this one in Cincinnati, enclosed cars with masonry and glass, had high fireproofing, ventilating costs.*



OPERATION

Two garage goals:

In fully automatic garages, the big managerial problem is to see that the machinery is in working order. One full-time engineer may solve this problem.

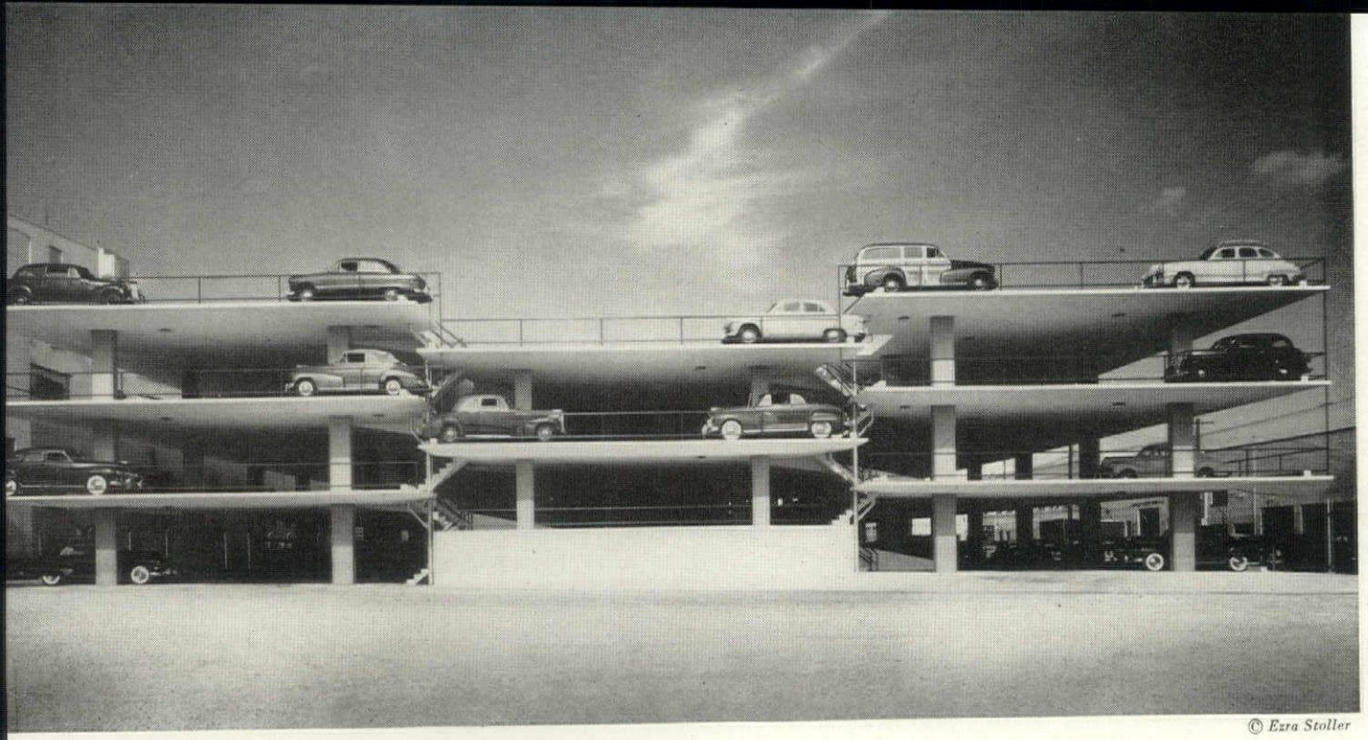
Toward the one-man garage. Ramp garages are another matter. If attendants park the cars, the manager has to schedule and direct as many as 30 employees. With a good 2.5 turnover, 20 attendants in a 550-car garage handle only 68 cars apiece during a ten-hour day. Labor costs run as high as 40% of gross.

Such high labor costs are pushing ramp garages closer and closer to self-park operation, which requires only one man per floor (called floorman) to direct traffic, plus the manager and one or two attendants to handle the ground-floor check-in-check-out operation. Analysis of one attendant-park project shows that a switch to self-park operation would save 51% in labor costs if only floormen and ground staff were used and 62% if only the ground staff were retained.

A dividend from "breakage." Most profitable of all garage customers are the short-time parkers—usually shoppers who park from one to three hours. They supply the all-important "breakage" that supplies the profit to many operations. Breakage is simply the gain to the garage when 1) a parker leaves before the first hour is up but pays a full first-hour price, or 2) leaves during some part of a subsequent hour but pays that full hour's price. It adds an average of 25% to income from short-time parkers over a period of time. For example, a 500-car garage with a two-time turnover, an average parking time per car of two hours and a rate structure of 35¢ first hour plus 15¢ each additional hour would gross $500 a day. Breakage brings the gross to $625.

Rate structure can be used to attract or repel different types of parkers. For example, a rate of 25¢ first hour, 20¢ each additional hour will pull short-time parking, repel all-day traffic. An attractive all-day rate with a stiff hourly rate will do the reverse.

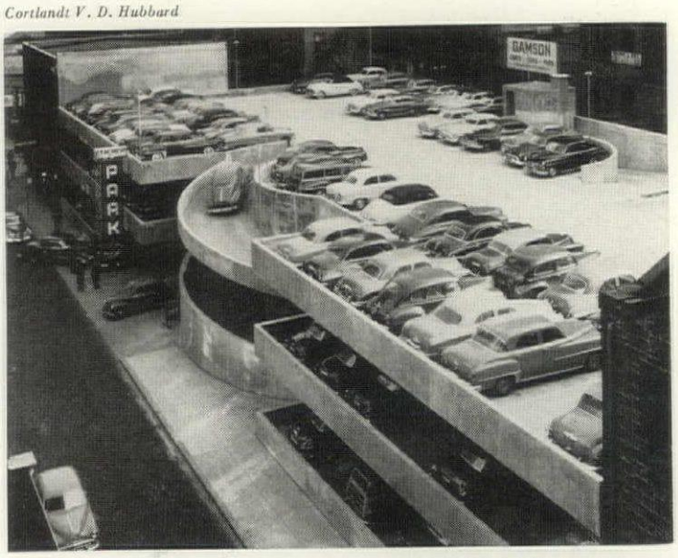
Supplemental activities can add security to any parking venture. Car wash, gas, oil and grease service and even sale of car appliances provide the margin of profit in some operations.



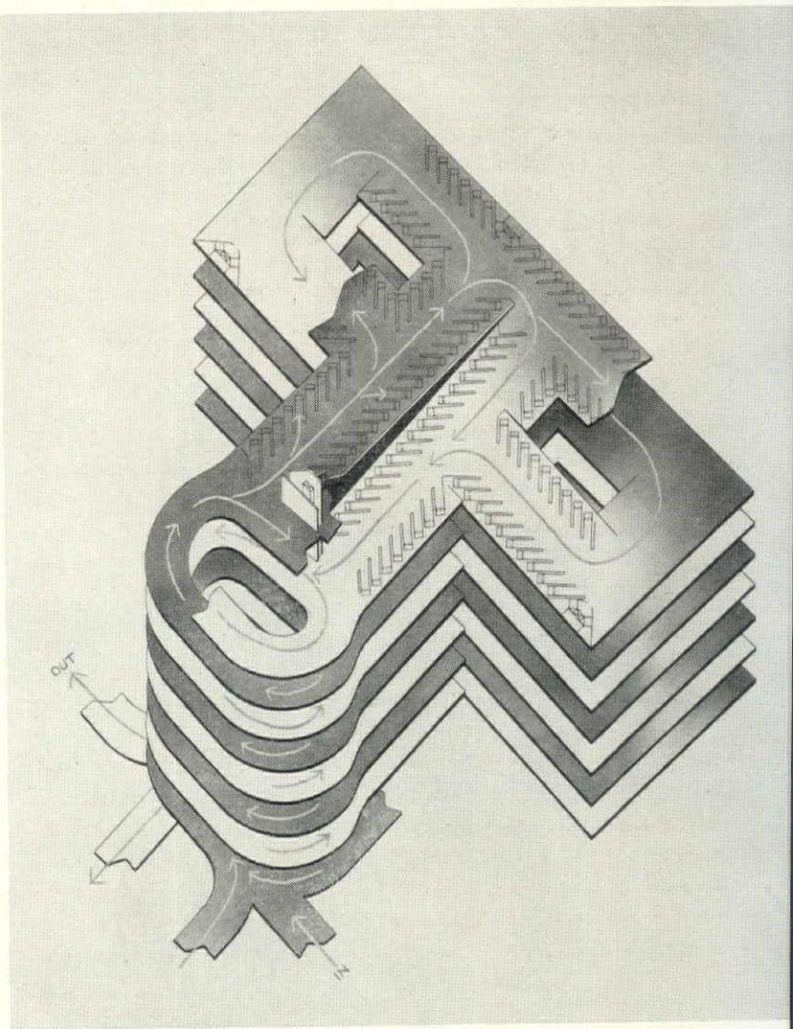
© Ezra Stoller

Today's garage, *like this Miami open-deck type by Architect Robert L. Weed, is little more than floor slabs held aloft by columns. Metal guard rails form only vestigial walls. Competed in 1949, this is still the nation's most handsome garage.*

Cortlandt V. D. Hubbard

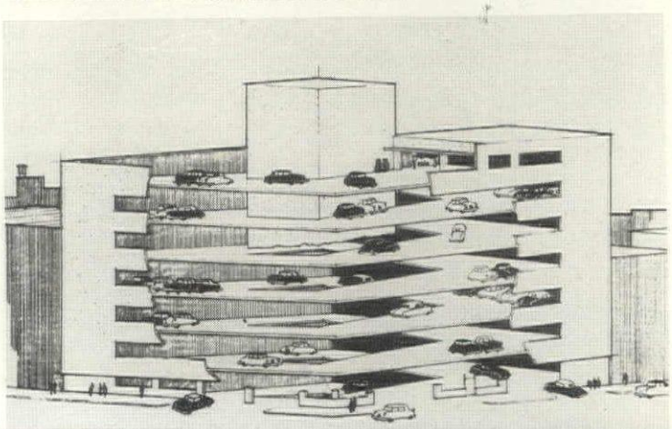


Attendants park cars *in small, 184-car garage in Philadelphia. Separate up-and-down spiral ramps speed operation. Architect: Robert M. Brown.*



Complete self-park operation *is envisioned in this project developed by Architect Hermann Herrey. Foolproof one-way lanes direct customers up spiral ramp system to angled parking stalls. Turn of meter key locks front wheels in stall. On return, customer deposits charge shown on meter which unlocks wheels. All lanes lead eventually to down ramp and street.*

Customers park cars *on sloped floor of garage for General Petroleum employees in Los Angeles. Attendants turn them around to make exit easier. Result is a semi-attendant operation.*



TWO RAMP GARAGES

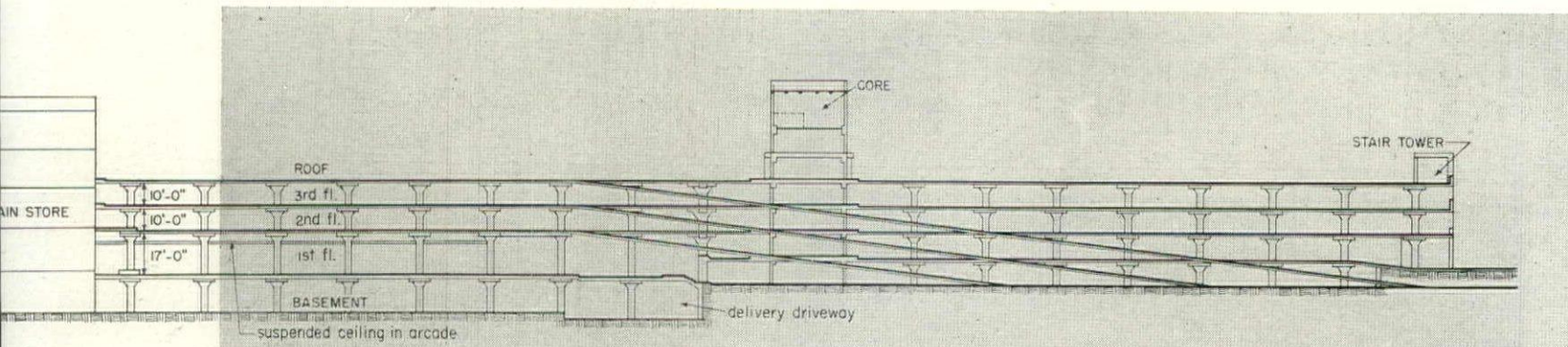
1. WORLD'S LARGEST GARAGE

helps motorists park their own cars by providing five big floors, served by six big ramps. Result: more customers for an attached department store

The garage on these pages is the largest in the world. It measures 216′ x 570′, has five levels totaling 640,000 sq. ft., provides (along with nearby curb space) 2.8 sq. ft. of parking space for every square foot of selling area in the store. It cost $4.50 per sq. ft. ($1,800 per stall), holds 1,600 cars.

Like most department store garages, it was not built primarily for profit (as its 5¢-for-three-hours rate suggests), but to attract customers. It does this by providing parking space within an average walking distance of 300′ of the store, which is accessible from every level of the garage. The second-level arcade is flush with the store's first floor; other levels connect to store floors by stairway.

Angle parking, recommended for customer-park operations, is used on the reinforced concrete decks to put three 8′-3″ stalls between columns spaced 30′ o.c. Floors cantilevered 13′ to 15′ beyond outside columns provide a row of parking spaces along the edge of each floor. On each side of the garage, an entrance ramp connects all levels, while each level has individual exit ramps on one side, interfloor travel ramps on the other.





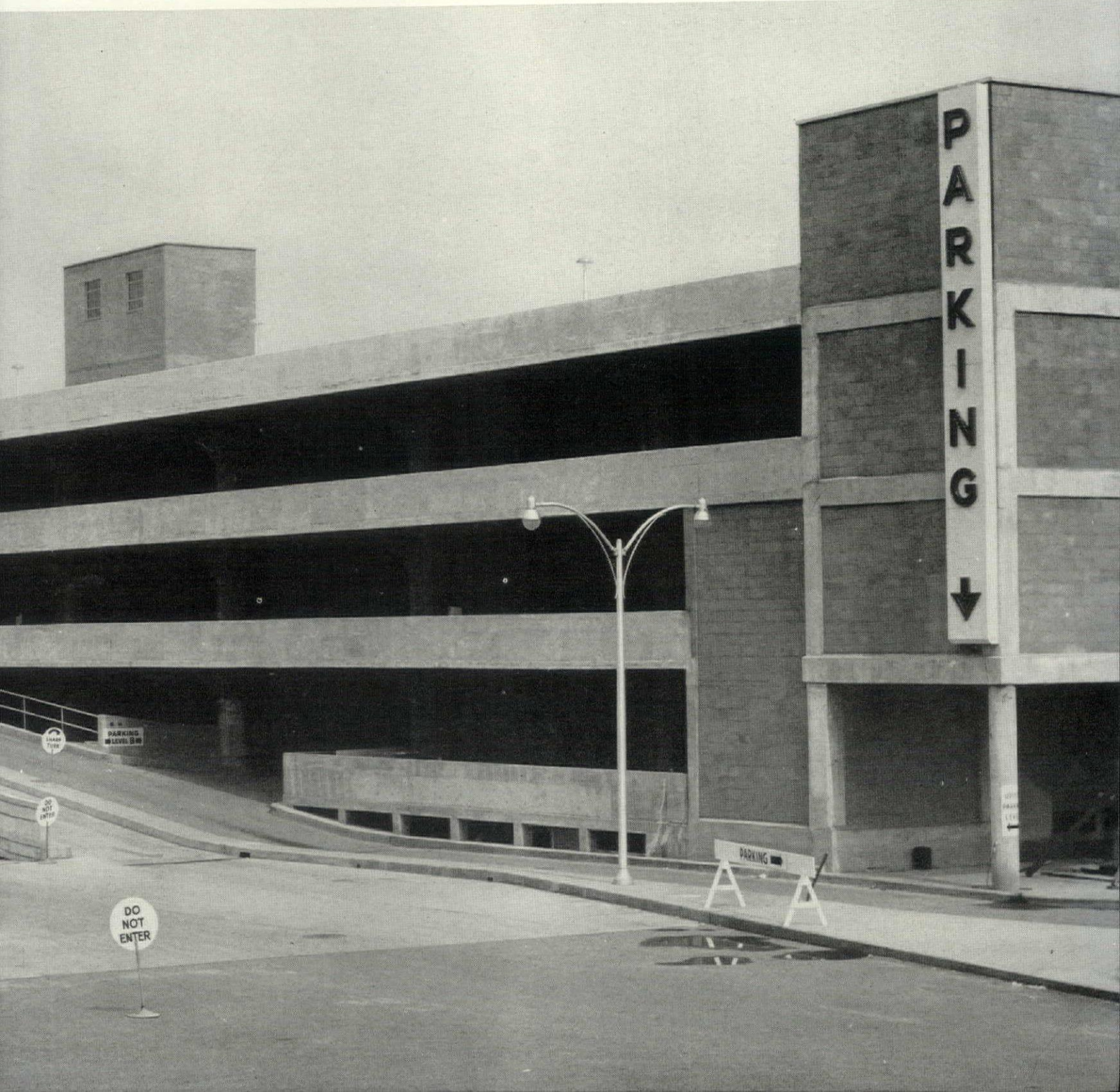


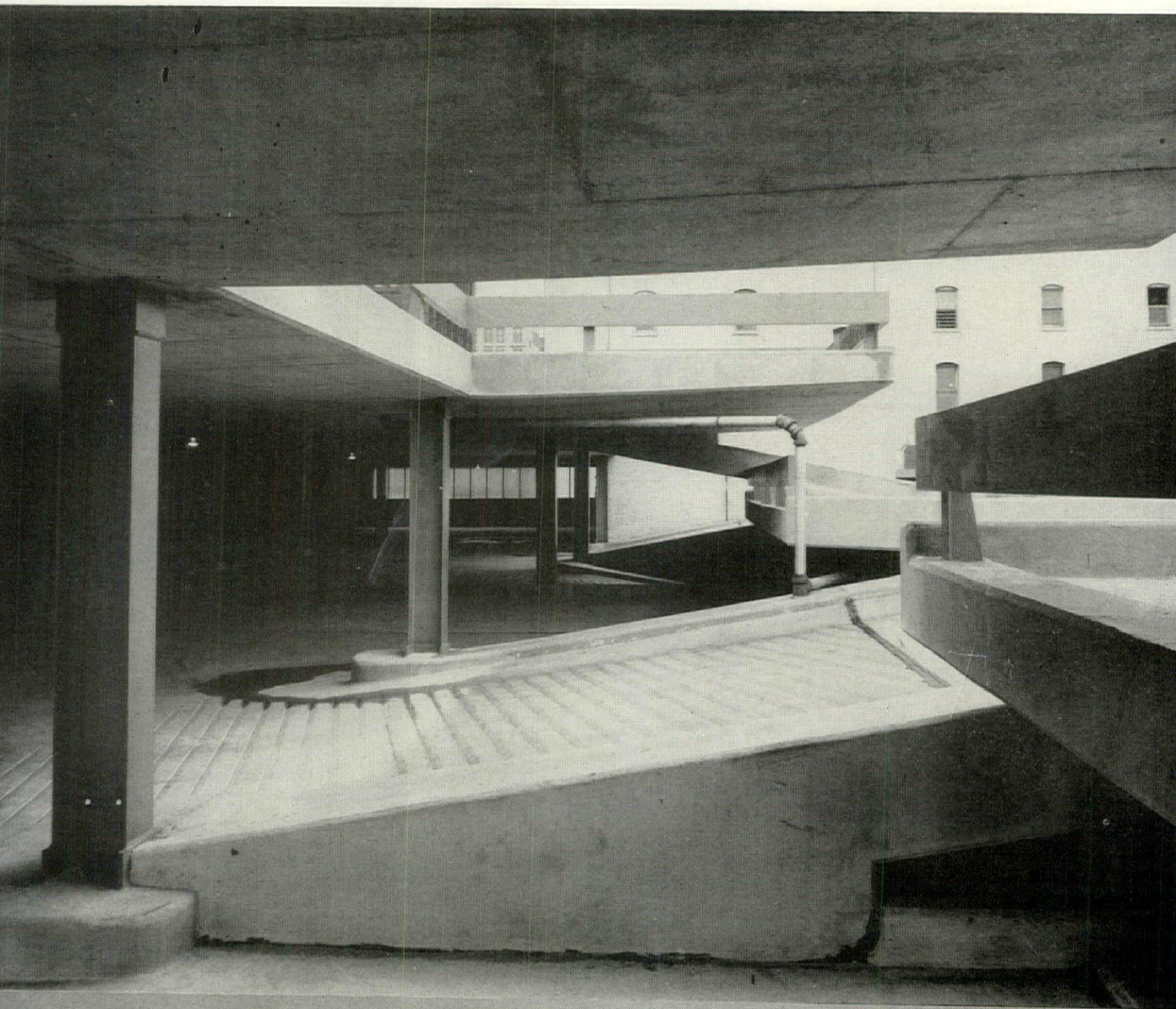
A. E. Nesbitt

PARKINGTON SHOPPING CENTER,
Arlington, Va.
HECHT CO., owner
KAHN & JACOBS, architect
ABBOTT, MERKT & CO.,
engineers
EDWARD ASHLEY,
mechanical engineer
PRESCOTT CONSTRUCTION CO.,
contractor
NATIONAL GARAGES, INC, consultants

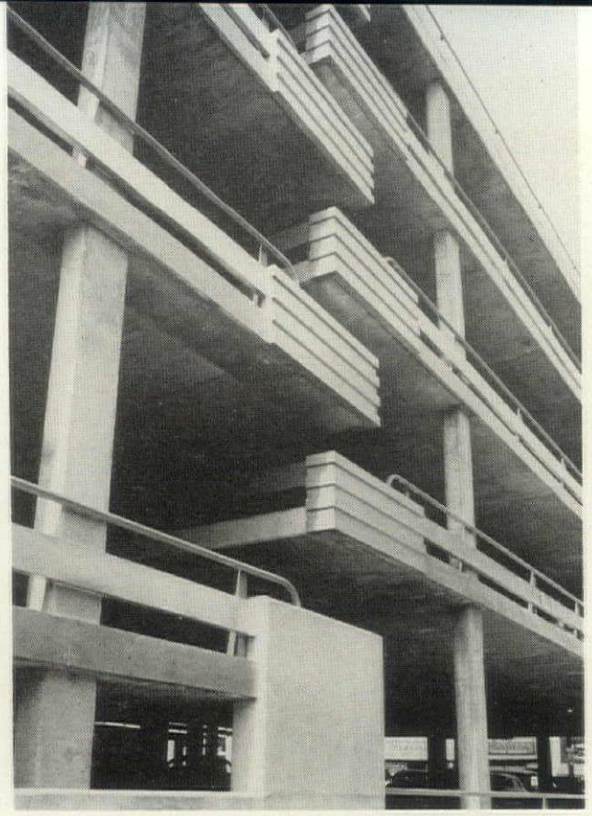
Five-level garage *covers 570' x 216' site, adjoins main store of 18-acre Parkington Shopping Center in Arlington Va. Capacity: 1,600 cars.*

Three ramps *serve each side of garage. Top two-lane ramp is for entrance to all levels and exit from roof. Others are one-way.*

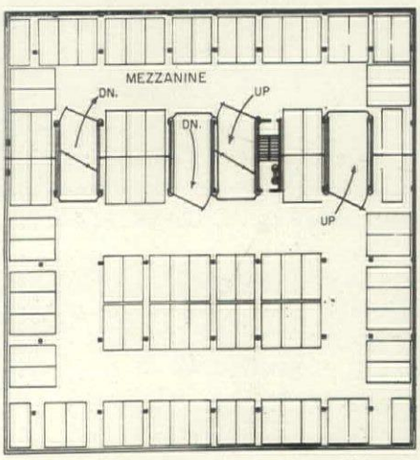




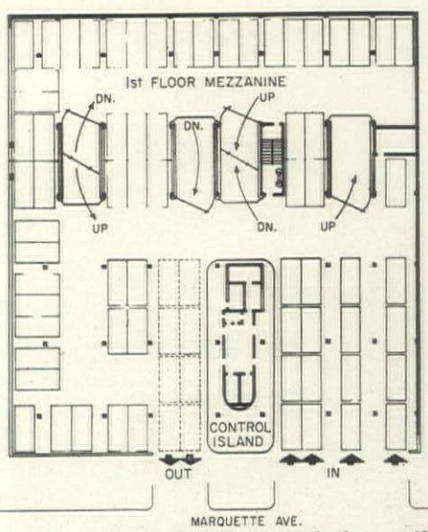

AUTO
PARK



Staggered floors overlap (above), gain parking space for interior stalls. Flat slab floors (opp. p.) are cantilevered 14′ beyond exposed steel columns.



TYPICAL FLOOR PLAN



FIRST FLOOR PLAN scale:

DOWNTOWN AUTO PARK, INC., owner
LARSON & McLAREN, architects
H.N. LERIGHTON CONSTRUCTION CO., contractors
NATIONAL GARAGES, INC., consultant

2. LOW COST OPEN DECKS

bring profit to downtown merchants, solves parking problem at no expense to city, explode three myths about off-street parking

Myth No. 1: *Private enterprise cannot or will not solve the problem.*

The city of Minneapolis planned to build this garage with revenue from a bond issue. When downtown merchants heard of it they offered to supply the 1,800 off-street spaces recommended by a survey. They formed Downtown Auto Park, Inc. and raised $600,000 equity capital to build two garages that would supply 1,354 of the needed spaces.

Myth No. 2: *Lending institutions will not go into garage ventures.*

Downtown Auto Park, Inc. negotiated an insurance company loan of $1.5 million—a fat 71% of the capital—to build the garages.

Myth No. 3: *Restrictive codes cannot be changed to take advantage of modern garage designs.*

Three code revisions made this garage a reality: elimination of sprinkler system above grade; omission of exterior curtain walls on street sides (rear walls of each garage are enclosed with corrugated wire glass panels); use of exposed steel columns above the ground floor.

As a result of their efforts, the 32 stockholders of Downtown Auto Park, Inc. have two profitable garages that cost $3.79 per sq. ft. and the city's parking problem is more than two-thirds solved at no cost to the city.

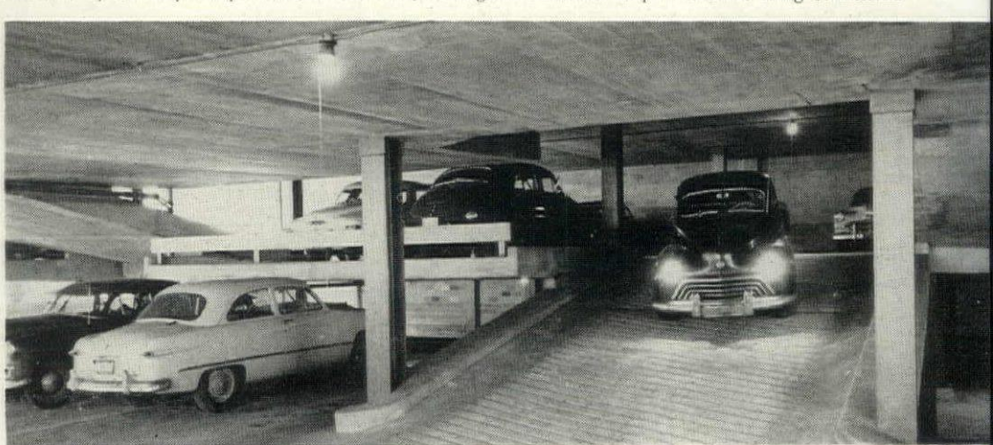
This garage, the smaller of the two, holds 535 cars in 8′-wide stalls, cost $1,034 per stall.* It has staggered floors, one-way ramps, four levels above the ground floor and occupies a 156′ x 157′ site. During its first year of operation it has achieved a two-time turnover with the help of a generous 20-car ground-floor reservoir. Designed for attendant parking, the garage has man-lifts to take attendants up and down through the building. Rates are 25¢ first hour, 15¢ each additional hour for 435 transient spaces, and $12 to $23 for 100 monthly spaces. Gas sale, lubrication and wash service are provided.

Structure is flat slab-reinforced concrete. Floor slabs were made 12″ thick of air-entrained concrete to prevent deterioration from salt brought in on cars and cracking due to wide temperature range in that northern latitude. Slabs are cantilevered 14′ beyond columns with a slight taper to the edge, which is faced with stainless steel.

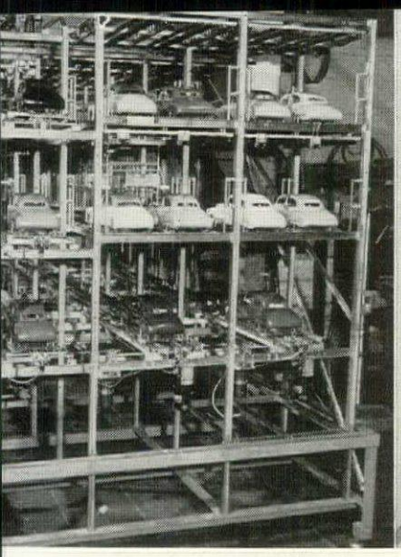
Only the waiting room and basement grease-pit areas are heated. The entire basement is ventilated by a unique system which reverses the usual exhaustion method. Ducts introduce fresh air which raises the pressure and insures over-all ventilation. Air escapes up the open ramps to the outside.

* Due mainly to its larger size the unit cost in the other garage was only $960 per stall.

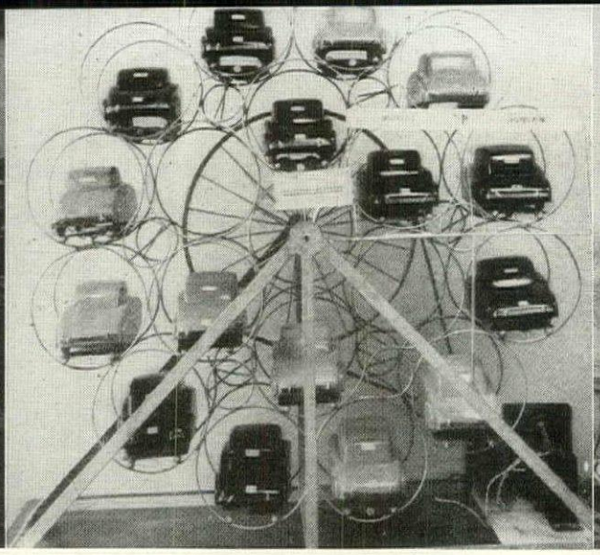
Two sets of one-way ramps increase turnover. Corrugated concrete helps overcome icing conditions



— *S. H. Kammerdiener*



Elaborate dollies *operate this model of an automatic garage*



Ferris wheel *garage model is literal translation of amusement park device.*



Hydraulic hoists *raise or lower stalls in Park-A-Ramp scheme.*

FIVE MECHANICAL GARAGES

for small, expensive mid-city sites

In the turbulent history of garages, no group has had a rougher ride than the men who believe in mechanical garages. For one thing, mechanical-garage experiments have attracted a lot of crackpots whose Rube Goldberg schemes have overshadowed the efforts of serious engineers. On top of that, America's delight in gadgets has prompted magazine editors to display many such schemes, hailing them as the answer to the parking problem. Since World War II, however, most of the gadgeteers have departed, leaving the field to a handful of designers who have developed workable mechanical garages. Today, three types are in operation; at least two others possess sound ideas that may soon be tried. All five are detailed on the following pages.

Where mechanical garages fit in

Mechanical garages differ radically from ramp garages in several important respects:

▸ *They can be put on high-cost land* that prohibits ramp operation. Rising higher than ramps, they park more cars per square foot of ground area.

▸ *They require little space,* which adds to their ability to operate in high-land-cost locations. Ramps cannot be efficiently designed for lots less than 105′ wide but mechanical garages are suited for frontages from 100′ down to a minimum of 24′.

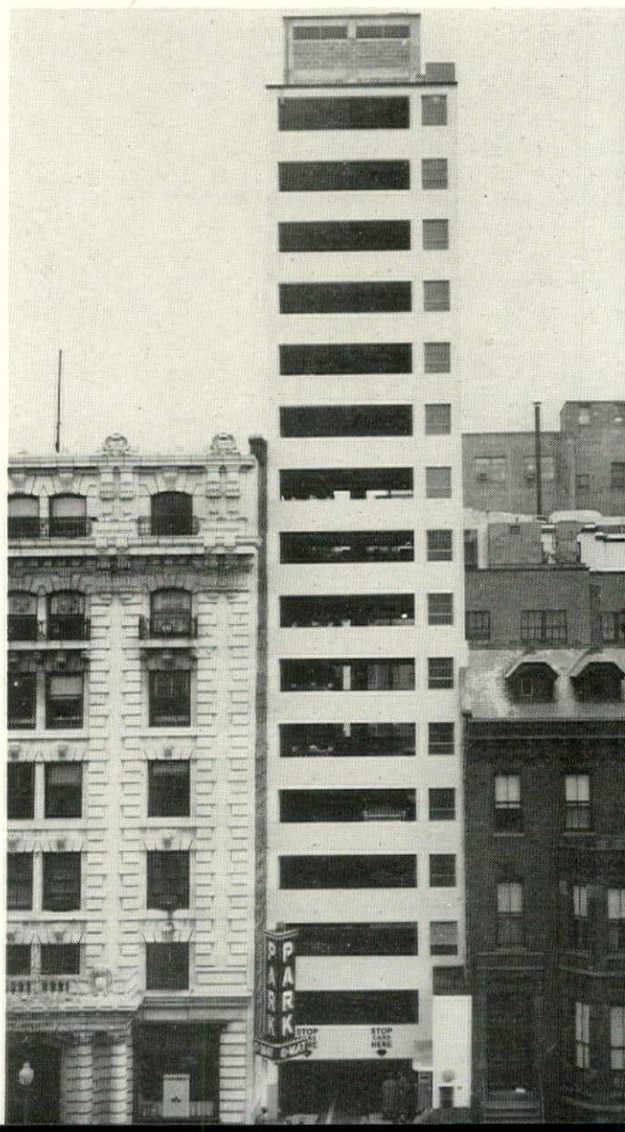
▸ *They permit higher turnover rates* than ramp garages. They have hit a four-time turnover where best ramp operations vary from 2.5 to 3.

▸ *They are essentially for short-time parkers* where ramps are better suited to all-day trade.

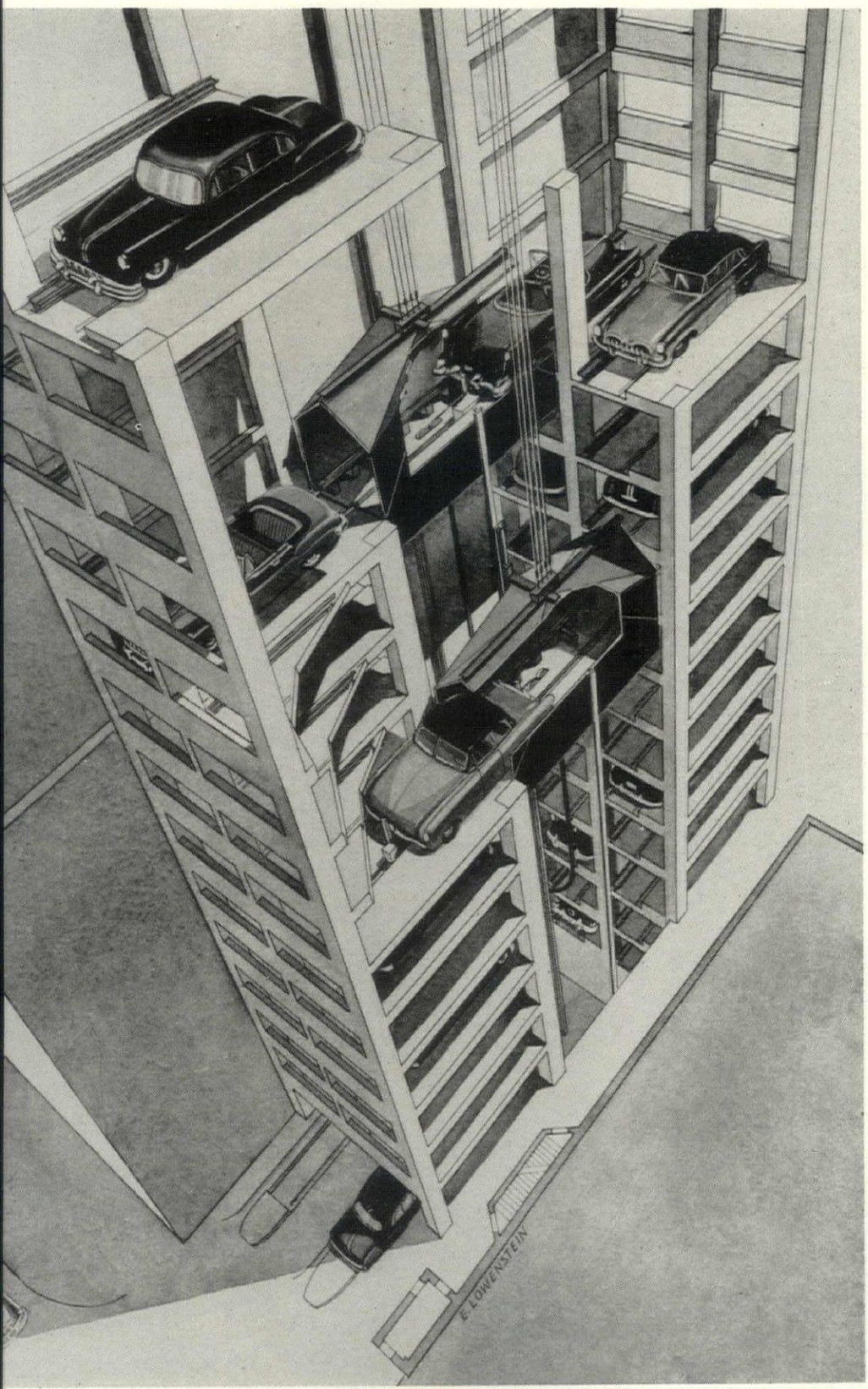
▸ *They cost more per stall* than ramps, due to the machinery's initial expense and maintenance.

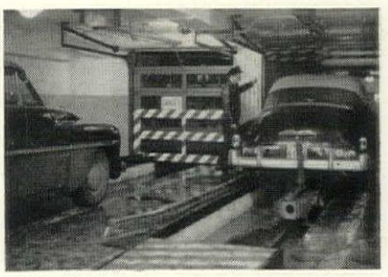
▸ *They require a smaller labor force* than ramps (which balances higher machinery and maintenance costs). Full automation may permit one man in a mechanical garage to handle 150 cars compared to five men for 150 cars in a typical ramp garage.

Sixteen stories *of cars are stacked in Washington's Park-O-Mat. The fully automatic garage occupies a slim 25′ x 67′ site, holds 68 cars above the ground floor, 72 with ground floor full.*



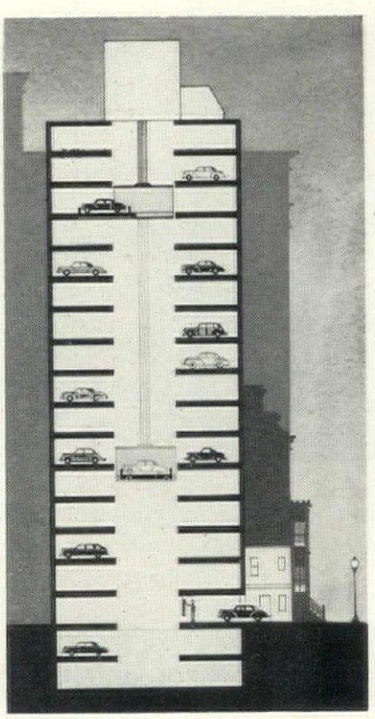
LIFE: *Bernard Hoffman; Antkers; Wide World; Standard Oil Co. (N.J.); Hank Walker*—LIFE





Dolly *(above) grasps car parked by customer on ground floor in first step of completely automatic parking process. Attendant never touches car, simply operates master control panel directing machinery to park or de-park the cars.*

Elevator *(left) rises to assigned level and dolly, still gripping car, moves forward or backward to deposit car in stall. Once empty, elevator drops to ground floor or picks up another car on the way down. Two elevators serve the 68 stalls in 15 levels above the ground, two below (section, below). Four of these basic units could be located side by side on 100′ frontage in high land cost areas with more levels added if necessary.*



1. FIFTEEN-STORY ELEVATORS
on 25′ lot park 265 cars a day in less than 2 min. each

Tallest and narrowest industrial building in Washington, D. C. is a fully automatic parking garage. It is 16 stories high, occupies a 25′ x 67′ site. A single operator—who never leaves the ground floor—parks and de-parks as many as 265 cars a day (8 A.M. to 6 P.M.) by simply pressing a button on the master control panel. The unit holds 68 cars (72 with ground-floor "magazine" full). On a larger site, multiples of the basic unit could be used.

Park-O-Mat has hit a 3.9 turnover, cost about $2,000 per car space. It can be built into office buildings, hotels, or apartment projects, where its cost would be less since a separate building would not have to be built to house it.

PIGEON HOLE PARKING
Leo and Vaughn Sanders, designers

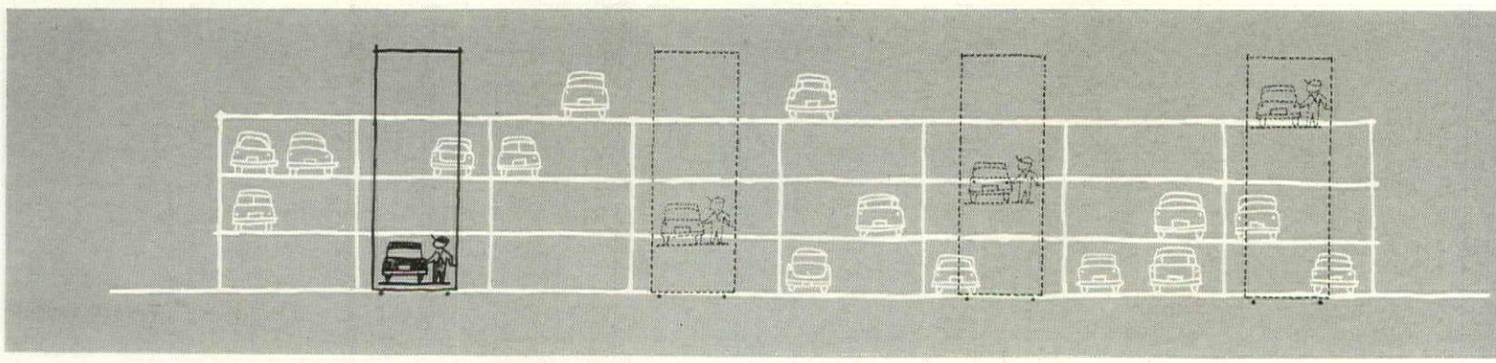
2· LOW-COST STEEL CAGE

with track-mounted car carrier fits on 50-100′ lots, but achieves high turnover

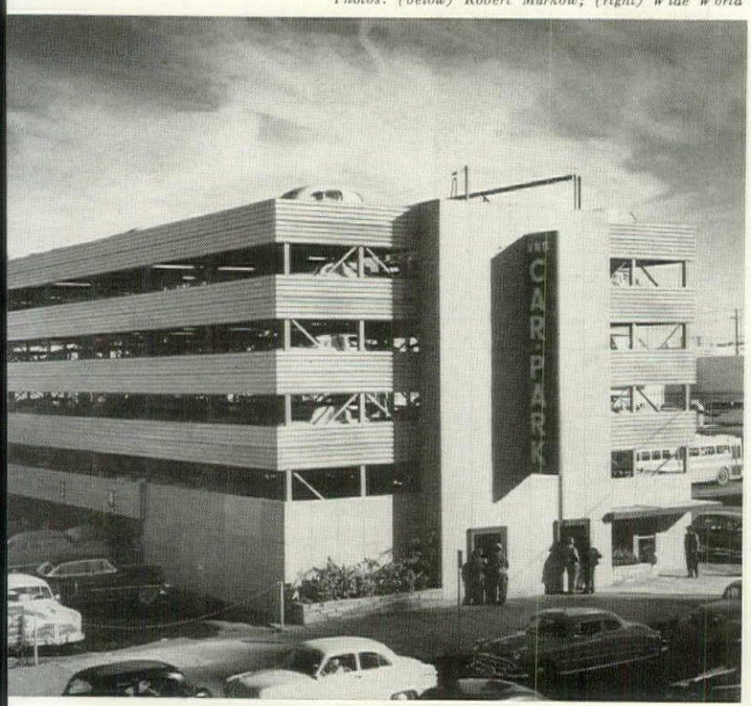
Ten automatic garages like this are already in operation and four others are being constructed. They consist of a multilevel steel framework of 15′ x 19′ stalls each of which holds two cars. A 20′ carrier running on railroad tracks and a dolly automatically lift and deposit cars in assigned stalls.

While this garage can be erected on lots as narrow as 50′, a width of 100′ increases efficiency of operation. Six levels are recommended for all but highest demand areas where as many as eight or ten levels can be used. Operating records: to park a car in the most remote stall in a 144-car garage took 1 min. 22 secs.; five-time turnover was reached in a 72-car unit.

Pigeon Hole costs are phenomenally low; some garages have been put up for as little as $400 per car space. Its low cost, which competes with the most economical ramp structures, makes the system usable on low-cost land and in towns with as little as 35,000 population. Its simple bolted steel framework and decking suit Pigeon Hole also for operation on leased land; the steel can be moved inexpensively to another location when the lease expires.

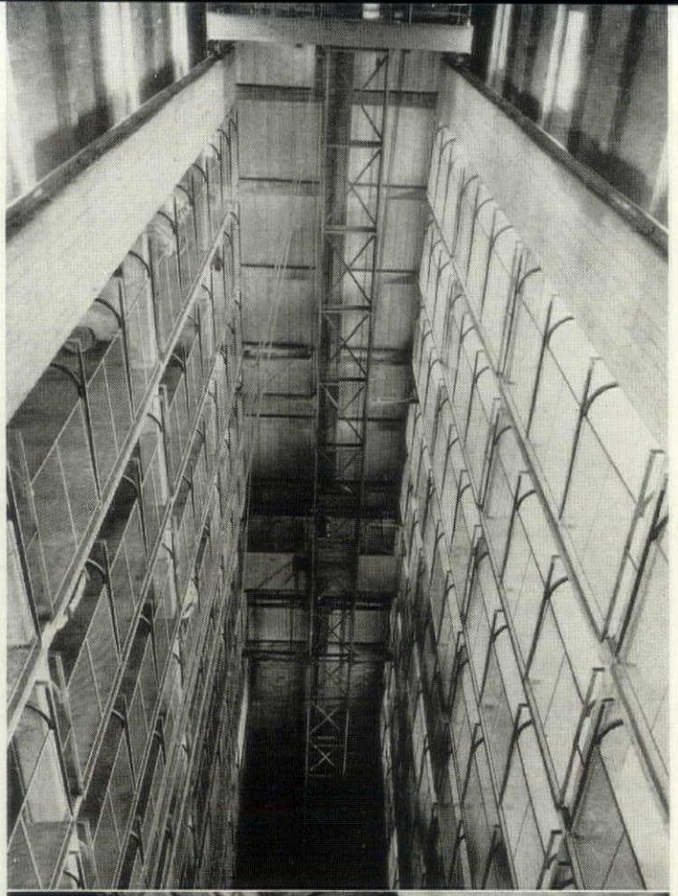


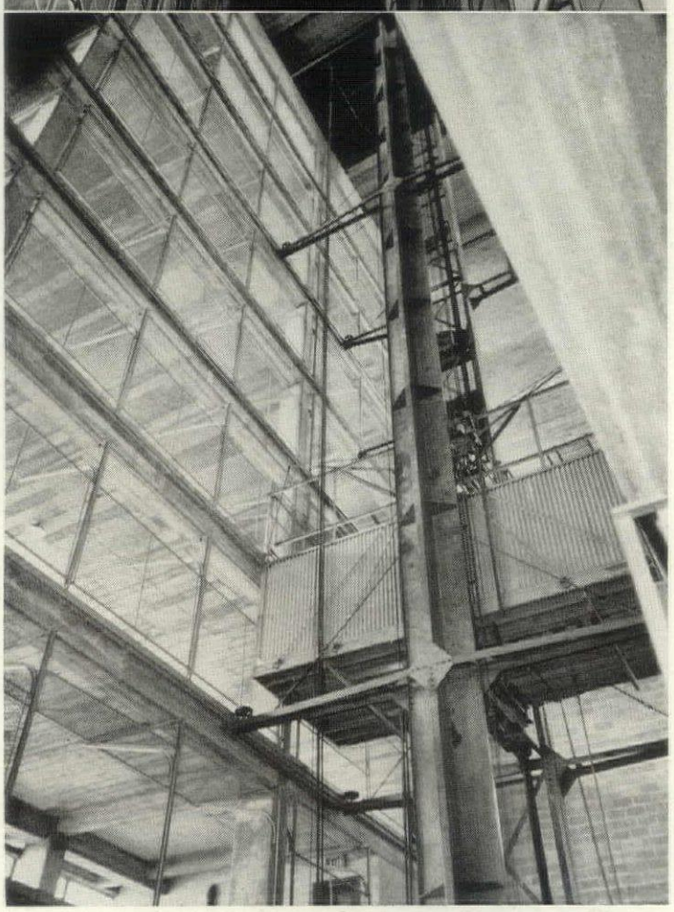
Photos: (below) Robert Markow; (right) Wide World





Carrier *moves horizontally (top) on railroad tracks as elevator raises car to stall level. Originally designed for attendant operation, the system is now fully automatic. It consists of demountable steel framing, can be erected and left exposed (r.) for as little as $400 a car space or finished with light metal and porcelain spandrel units (above) for $50 more per space. Garage above is in Portland, Ore.; one at right, Madison, Wisc.*





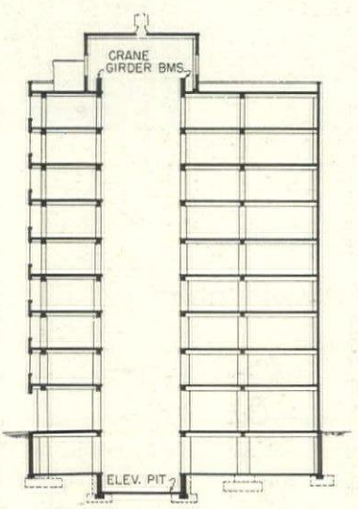
BOWSER SYSTEM
V. C. Bowser, designer

3. OVERHEAD CRANES in garage 32-90′ wide can de-park cars without electrical power

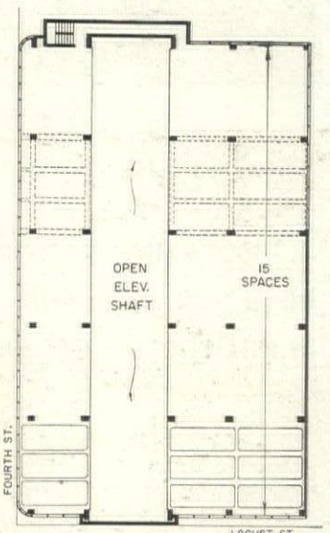
This mechanical garage system has been operating in Des Moines for over a year. In principle, it is similar to Pigeon Hole (opp. p.) but the carriers or moving cranes are hung from rails at the top of the structure. The Des Moines' garage has eight levels above grade, one below, holds 430 cars.

An attendant drives the car onto the elevator platform, presses a button on the control panel, which starts the elevator upward and the carrier sideways toward the desired stall. On arrival, the attendant parks the car. Time to deliver a car from the farthest point: 1 min. 20 secs. Turnover is more than two.

Frontage required for the system ranges from 32′ minimum to an optimum of 90′. A basic, one-elevator unit has a capacity of 135 cars; as many units as necessary can be combined to meet the demands of the location. Protection against power failure lies in over-counterweighting the elevators. When empty, they rise and can be manually stopped at a desired level. With a car on them, they coast down to ground-floor level. Cost of Bowser units is approximately $1,300 per car space for a 500-car garage.



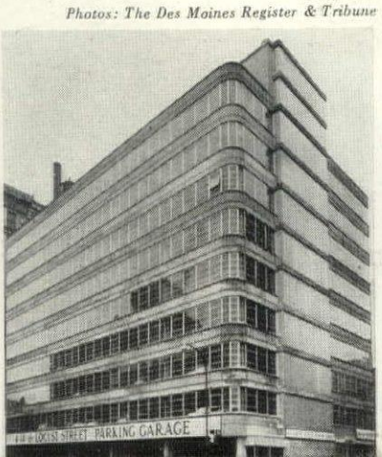
TRANSVERSE SECTION

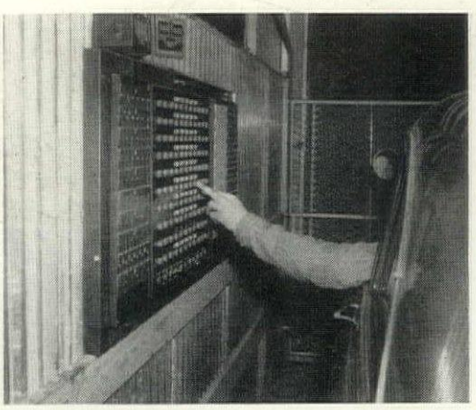


TYPICAL FLOOR PLAN

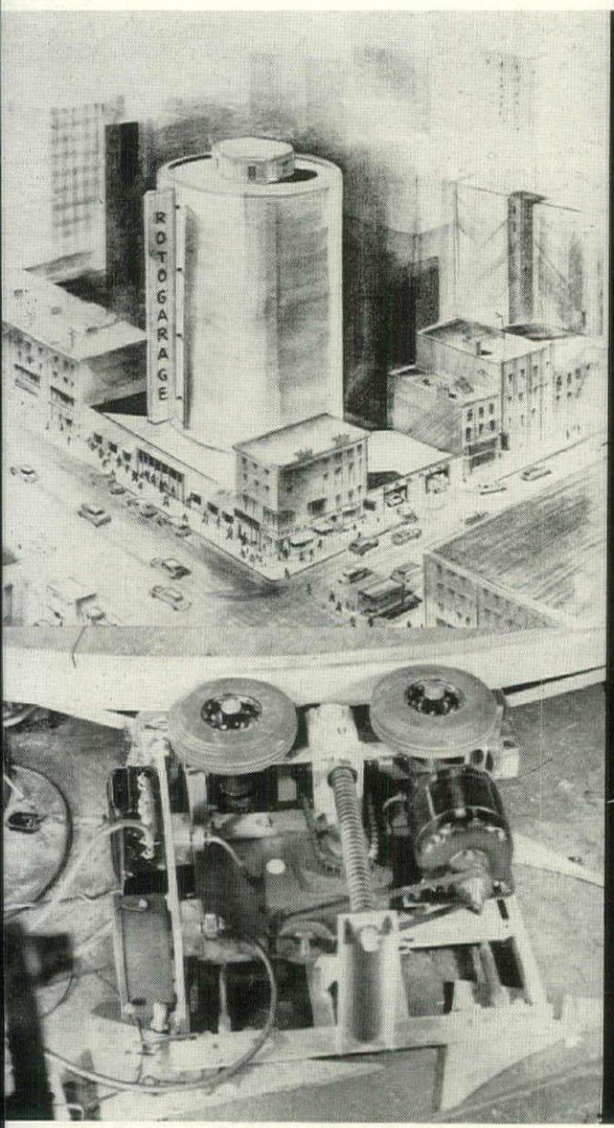
Carrier *hangs from roof, permits more levels to be used, makes basement levels more accessible. System is not fully automatic since attendants drive cars on and off elevators. Des Moines installation (right) is enclosed.*

Photos: The Des Moines Register & Tribune



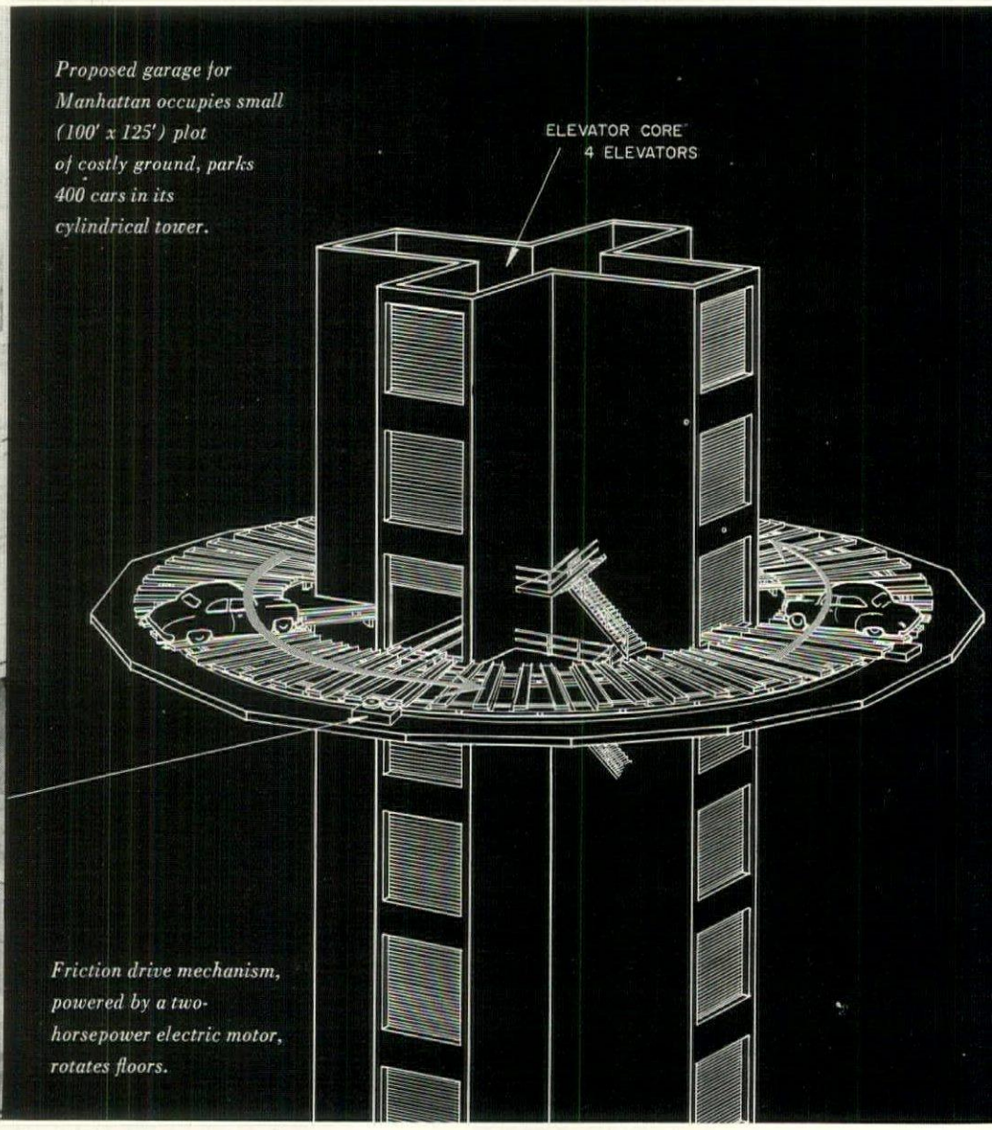


Control *panel on elevator handled by attendant directs carrier and elevator to desired stall.*



Friction drive mechanism, powered by a two-horsepower electric motor, rotates floors.

Proposed garage for Manhattan occupies small (100′ x 125′) plot of costly ground, parks 400 cars in its cylindrical tower.

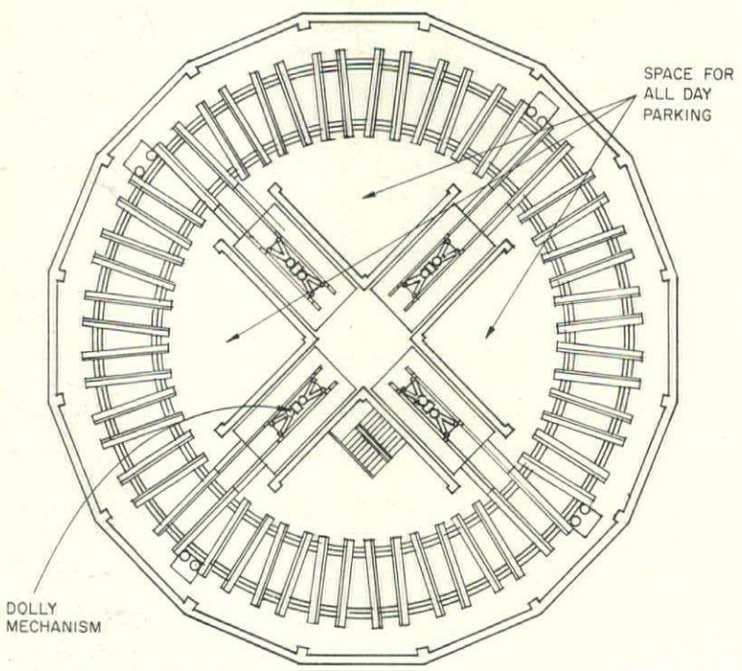


4. ROTATING FLOORS
align 500 stalls with four elevators in this 100′ x 100′ garage

This projected, fully automatic system overcomes the two most obvious limitations of most mechanical garages: 1) crudely accomplished horizontal movement with heavy carriers, 2) restriction of horizontal movement to the reach of the dolly. In the Rotogarage, horizontal motion is provided by the revolving floors, which bring the car stalls to the elevators as they rise to the assigned levels. Circular steel tracks bearing 28 stalls are roller-mounted on floor slabs. A small motor turns each floor (see photo). Maximum parking time in a 650-stall garage: 1 min. 24 secs.

At $2,500 to $3,000 per car space, Rotogarage is best suited to high demand areas in cities of over 250,000 popuation where an estimated six time turnover can be expected. A 500-car unit requires a 100′ x 100′ site.

Floor rotates *around elevators in conventional shafts in this fully automatic system. Any stall can swing into position in front of any one of four elevators to receive or discharge a car. Dolly on elevator parks and de-parks cars. Each floor has 28 stalls mounted on circular steel tracks with three stalls for all-day parkers in angles between elevator shafts.*



ROTOGARAGE
Albert Buranelli, designer

ALKRO INTEGRAL PARKING
Mihai Alimanestiano, designer

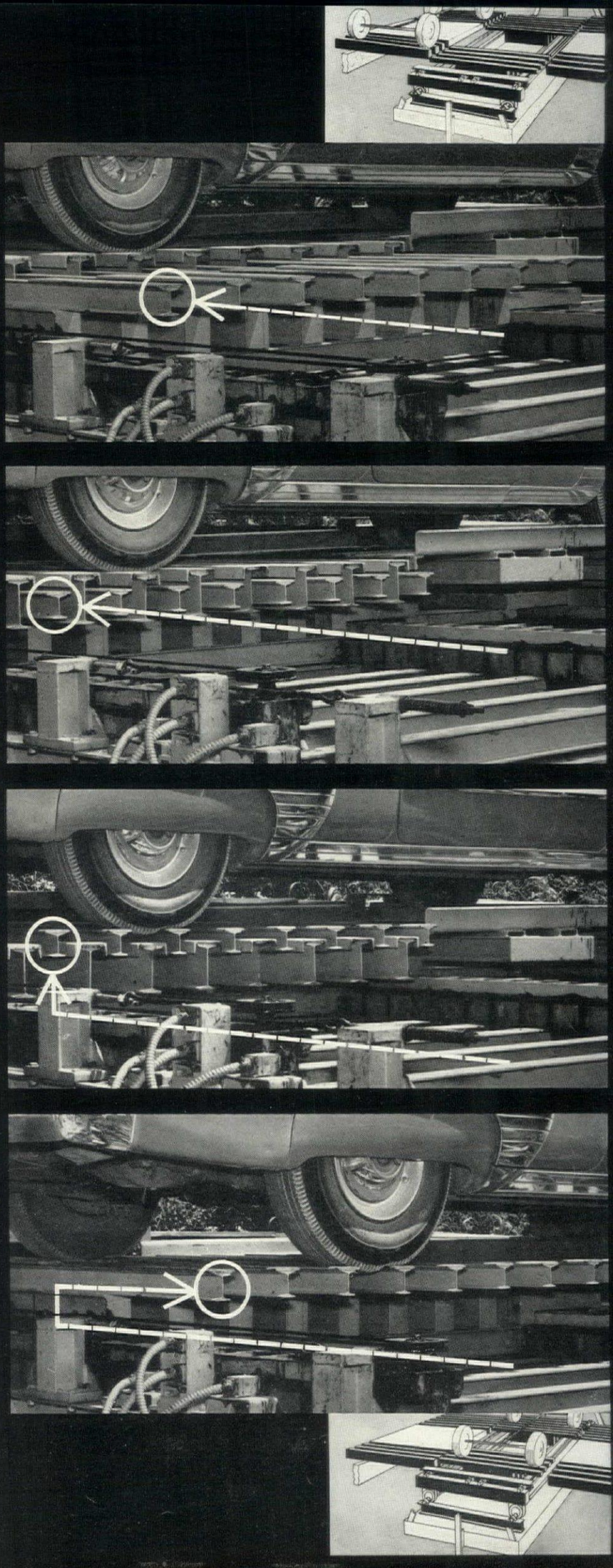
5. FORK-LIFT DOLLY
parks cars sideways to reduce minimum garage width to 24′

Outstanding feature of this experimental system is the mechanical dolly designed to deposit cars sideways into stalls. Basic idea is that of two sets of precisely spaced bars offset so that one set (on the dolly) meshes with the bars of the other set (in the stall).

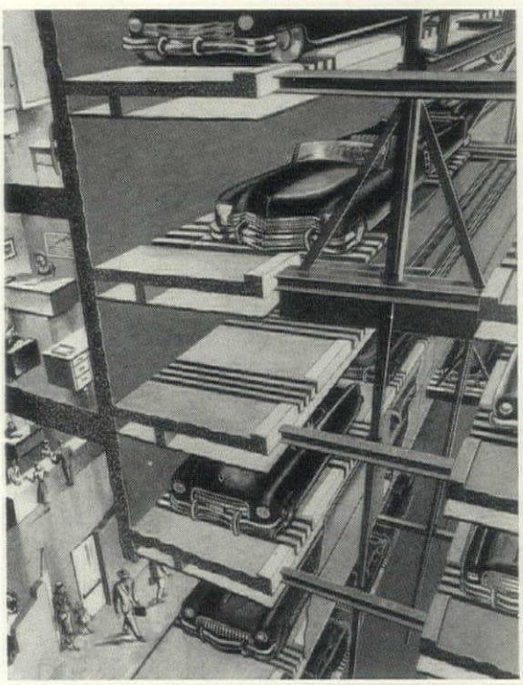
Designed for cities of over 100,000 population, Alkro anticipates operation in structures as high as 35 levels with a seven-time turnover on high cost land. Estimated time required to park and de-park a car from the most remote location: 1 min. 16 secs.

Alkro's chief advantage is that the dolly system moves cars laterally instead of forward or backward as do the other systems. This reduces dolly travel, speeds operating time and permits use of a smaller site.

Since a minimum unit can be placed on a 24′ x 24′ site, this system is more adaptable than any other to use in apartments, offices and hotels.



Operating cycle *of dolly (right) shows how cars are transferred. Top bottom: Bars of dolly slide between stall bars below car wheels. When fully extended dolly bars are raised, lifting car from stall floor. Dolly retracts to elevator platform bearing car. Lateral motion stacks cars on narrow site (sketch below) with minimum dolly movement.*



Silvedel

OUR NEW CRYSTAL TOWERS

Working mainly with the same material—glass—four architects come out with four widely different interpretations

CRITICISM by an anonymous contributor, based on the current "Built in USA" exhibit at the Museum of Modern Art

New York's Museum of Modern Art has selected these 23 buildings* of "quality and significance" for presentation in its new book and current show entitled

Built In USA: Postwar Architecture

MIT Senior Dormitory, *Cambridge, Mass.,* **AF,** *Aug. '49*
Alvar Aalto with Perry, Shaw & Hepburn

High School Stadium, *Atlanta, Ga., P/A, June '49*
Richard L. Aeck & Assoc.

Elementary School, *West Columbia, Tex.,* **AF,** *Oct. '52*
Donald Barthelme & Assoc.

Equitable Building, *Portland, Ore.,* **AF,** *Sept. '48*
Pietro Belluschi

Vassar Dormitory, *Poughkeepsie, N. Y., AR, Jan. '52*
Marcel Breuer

Red Cross Building, *San Francisco, Calif.,* **AF,** *Feb. '49*
Gardner A. Dailey & Assoc.

Bluebonnet Plant, *Corpus Christi, Tex., AR, Nov. '49*
H. K. Ferguson Co.

Harvard Graduate Center, *Cambridge, Mass.,* **AF,** *Dec. '50*
Walter Gropius, The Architects Collaborative

Alcoa Building, *Pittsburgh, Pa.,* **AF,** *Nov. '49 and Apr. '52*
Harrison & Abramovitz

UN Secretariat, *New York, N. Y.,* **AF,** *June '49 and Nov. '50*
Wallace K. Harrison and consultants

Eastgate Apartments, *Cambridge, Mass.,* **AF,** *May '51*
Kennedy, Koch, DeMars, Rapson & Brown

High School, *San José, Calif.*
Ernest J. Kump

Elementary School, *Vista, Calif., AR, June '51*
Maynard Lyndon

Maimonides Health Center, *San Francisco, Calif.,* **AF,** *Feb. '51*
Eric Mendelsohn

Lake Shore Drive Apartments, *Chicago, Ill.,* **AF,** *Jan. '50 and Nov. '52*
Ludwig Mies van der Rohe

Boiler Plant, 11T, *Chicago, Ill.,* **AF,** *Nov. '52*
Ludwig Mies van der Rohe

GM Technical Center, *Detroit, Mich.,* **AF,** *Nov. '51*
Saarinen, Saarinen & Assoc. with Smith, Hindman & Grylls

Opera Shed, *Stockbridge, Mass., P/A, Mar. '47*
Saarinen, Swanson & Saarinen

Lever House, *New York, N. Y.,* **AF,** *June '50 and June '52*
Skidmore, Owings & Merrill

Johnson Wax Co. Laboratory, *Racine, Wis.,* **AF,** *Jan. '48 and Jan. '51*
Frank Lloyd Wright

V. C. Morris Store, *San Francisco, Calif.,* **AF,** *Feb. '50*
Frank Lloyd Wright

Wayfarers' Chapel, *Palos Verdes, Calif.,* **AF,** *Aug. '51*
Lloyd Wright

Visitors' Information Center, *Portland, Ore.,* **AF,** *Aug. '49*
John Yeon

* *Twenty houses were also selected for the book and exhibit, 16 of which had been, or will be, presented in* FORUM *or* HOUSE & HOME.

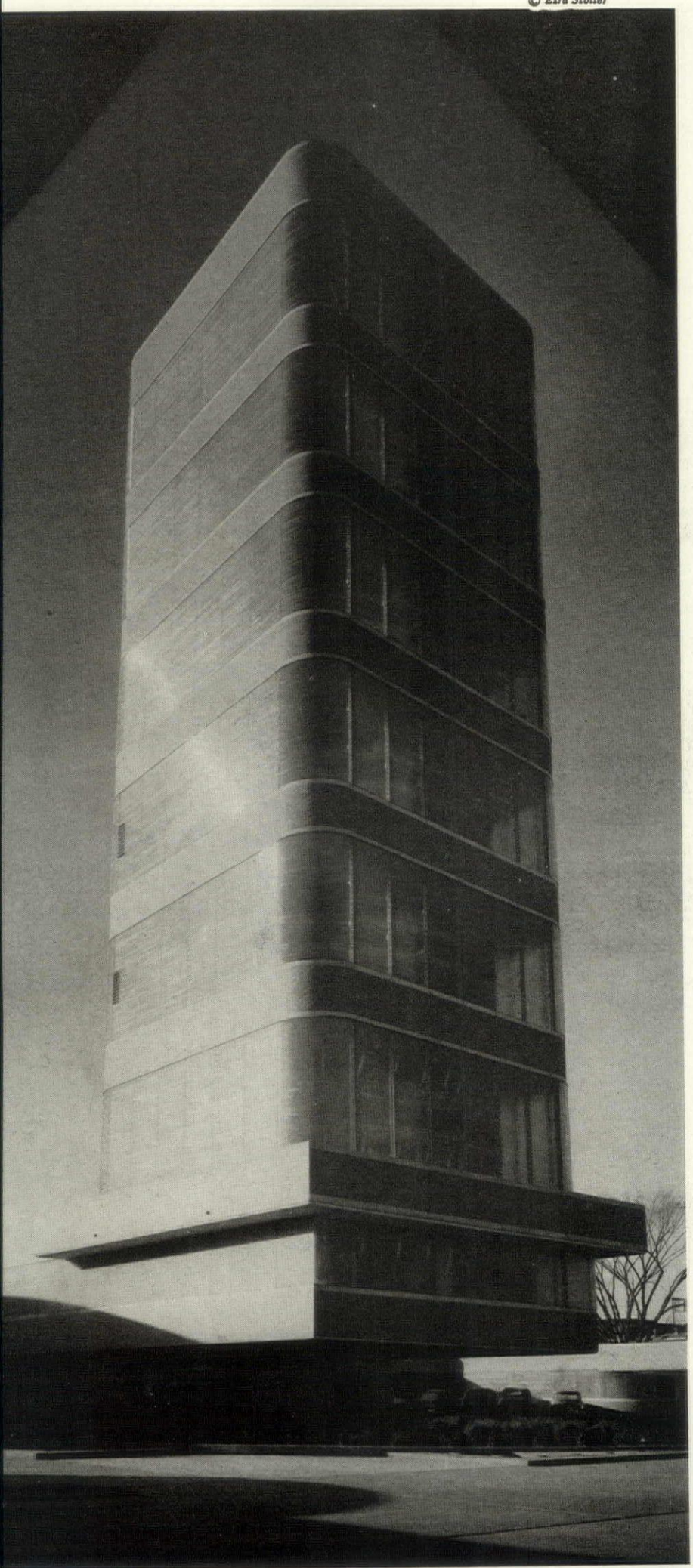
THE discovery in New York's Museum of Modern Art is glass towers. How recent these towers—all crystal—really are! They are postwar. Not since the cast-iron fronts of that other postwar period after the Civil War has glass been used so radically downtown: but those were fronts only. Even Paxton's magnificent Crystal Palace of 1851 and Kahn's glass factories were designed for a single floor. These towers are glass, and glass all the way around, and tall, and for the first time.

Let's then forget the rest of the show and concentrate on four towers; and let's postpone detailed discussion of how practical they are. Each is a little world; and the fascinating thing is that four men, all using the same material, should have suggested worlds so different.

What causes this age to be so fascinated with glass? Utilitarians say glass admits more light while keeping out weather —and Paxton had genuine need of daylight for his vast interior. But we need far less for our smaller floors, electrically lighted! Has the fascination perhaps something to do with the desire of our age to see, to see *through?* Glass removes visual *boundaries* while it preserves a fragile *enclosure,* where formerly the two ideas were one. What was opaque is rendered transparent to searching eye and mind. The man atop a glass tower has split-second access at least visually to the farthest galaxies of stars. There's a greater sense of power in being able to savor the full height built by human effort—and this is coupled with thrill because the protection is so slight.

Glass as a material is moreover of all our materials most sensitively alive. In a day which finds that things are but the momentary stabilization of active forces, glass is symbolic: it is manifestly less a thing in itself than the swift mirror of interrelated surrounding events, constantly changing. Glass is real yet unreal, a thing yet nothing, hard yet liquid in effect, empty yet with a color, its transparency disturbed by reflections and these distorted, teasing us with mystery.

But enough of this. What of these towers, these separate little worlds?



In his Johnson Wax Tower at Racine, Architect Frank Lloyd Wright has held industrial civilization at arm's length. He has held it to human scale at a modest height of 134′, softened its contours, reduced its contrasts, wrapped it in a mantle of textures and colors natural to materials, harmonious with Nature. Here glass is used not in the familiar big flat sheets but as a shimmering fabric of water-green tubing wound like thread around a huge mandrel or spool to produce a silken sheen. The brick bands are salmon. T-square is in evidence only for vivid contrast at the base. This is a Japanese lantern glowing in a neon world.

Architecturally these rounded contours and silken surfaces are humanly grateful, suggest animate not crystalline forms, modeled to the hand not the machine. Yet the handling is firm and the form is dynamic: within the silk cocoon the interior shows dimly like some giant crankshaft stood on end, an impression of repose gathered for powerful action.

Technically the building cuts across industrial rules. Science has been allowed to shape the parts and a share of the methods, but not the architecture. The building has an individual, not a standard form—individual not standard treatment of glass as a material. The laboratory plans are a new creation and so are countless elements such as the taproot foundation.

The symbolic interpretation of industry that the building gives is accordingly not of industry as it is, powerful yet ruthless, but of industry as it might be. The very metaphors that come naturally in describing the building illustrate the triple allusion. The columns at the base, carried over from the famous adjacent administration building, can be thought of as valves (industrial) or masonry umbrellas (the tradition of building) or water lilies or morning glories (out of Nature). So too, Wright has written of his tower as a conversion of our "rampant industrial system" from "weed into flower." To create buildings that foreshadow this translation of industry into a full human and natural life instead of an intruder requires a timeless, and somewhat Oriental, sophistication. But there is only one Wright. The imitators produce googie.

Mies van der Rohe's twin glass towers on Chicago's 860 Lake Shore Drive are totally different: the Doric order for the age of steel. Mies has used materials rectilinear, hard and cold along with methods sharp, standard, precise, based on universal industrial practice in the same degree that Wright's tower is special and rounded, using materials in a warm natural form.

Yet it would be a great error to say the Mies result was cold. Many who have seen the buildings on the ground declare them far better than the pictures: the "industrial black" paint of the steel turned into velvet by the air and by rich contrast with soft, creamy shantung drapes; the hypnotic multiplication of standard parts; the noble proportions and grave restraint; the exact right weight that gives rhythm to marching robust details. Through personal magic those very instruments of industrial impersonal power—glass and cold steel—that have so frozen our age have been captured and made welcome through beauty.

Mies has stayed rigidly in T-square discipline for a typical tall building, a universal glass tower. The order is Greek. The steel-rail "mullions" which "express" the cage serve a mingling of function and expression exactly like the classical pilaster.

Mies's basic unit is, however, not the pilaster but, unlike the classical orders, a unit of deep floor space: the standard bay. It approaches to being interchangeable, highly convertible, is therefore intensely industrial and urbane.

Such a world rests in serenity and reserve, asks that the leader do what the community does—but with expressive perfection. Because small differences come to have enormous value where all are working so precisely alike, the weaker imagination will make such a repeated world unspeakably dull and any clumsiness will show like a flaw in a diamond. "Impersonal architecture" demands highly personal art.

With Lever House in New York, designed by Gordon Bunshaft of Skidmore, Owings & Merrill, the world of Mies can be said to have come into a second generation. Gone is the weighty emphasis of steel rails as an industrial expression. Of all the towers this is most nearly crystalline, airborne. People say this effect is "clean" and "functional" but it is far from artless. The idea of hanging an elegant, airy screen of blue-green glass, aluminum and stainless steel around the steel frame is functionally just as arbitrary as welding on some stout steel-rail mullion pilasters. And fully half the glass is not for view but used deliberately to make the whole tower a mirror. This is the crystal kite among office buildings.

Like *all* these towers, Lever House seems to stand off the ground; but Lever House alone makes this a positive virtue, since the nice esplanade underneath (as yet unfinished) is genuinely usable. Just as the glass melts boundaries between "building" and sky so the open esplanade melts the boundaries between "building" and surroundings. The human being as a pedestrian here gains a fresh freedom of movement, out of our advances in an "industrial" art.

Hedrich-Blessing





General Motors Technical Center has laid its glass towers on their side. Though not all glass, Eero Saarinen's buildings are of materials all glazed, give the all-glass effect. If, in Mies's "860," the US meets the order of Greece, here Detroit meets the glow of Persia.

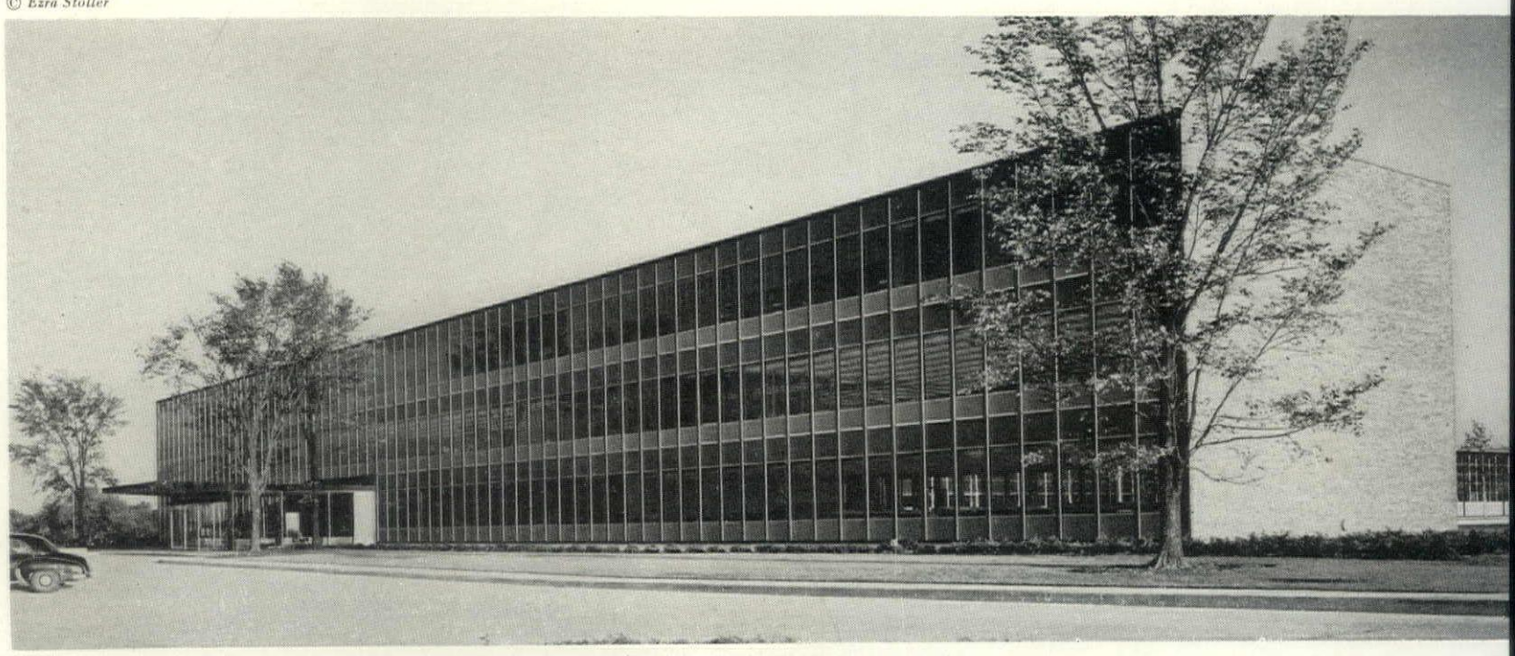
On the "Detroit" side, Saarinen has used the remarkable technicians of the motor city to achieve an industrialism beyond that of an older generation: where Mies modularized the *shell,* Saarinen has incorporated the whole plexus of modern *services* in his modular network so that wall and roof, partitions and sprinkler system, lighting, acoustics, air conditioning—all fit the brilliant kaleidoscopic pattern.

But the most fascinating aspect of the GM Center occurs beyond this adjustment of chassis and motor, art and production, design and feasibility. For suddenly "Detroit" comes to a stop, literally at the ends of the buildings, and Persia takes over. These brilliant glazed-brick end walls, in reds, blues, tans and chartreuse at full intensity, their color baked in for keeps and set against a rich calculated landscape of grass and trees and lakes under the sun—all take us back to that earlier splendor. The wealth engendered by metal and mechanism lets the architect have his fling with art and handicraft, doing things mechanism will never do.

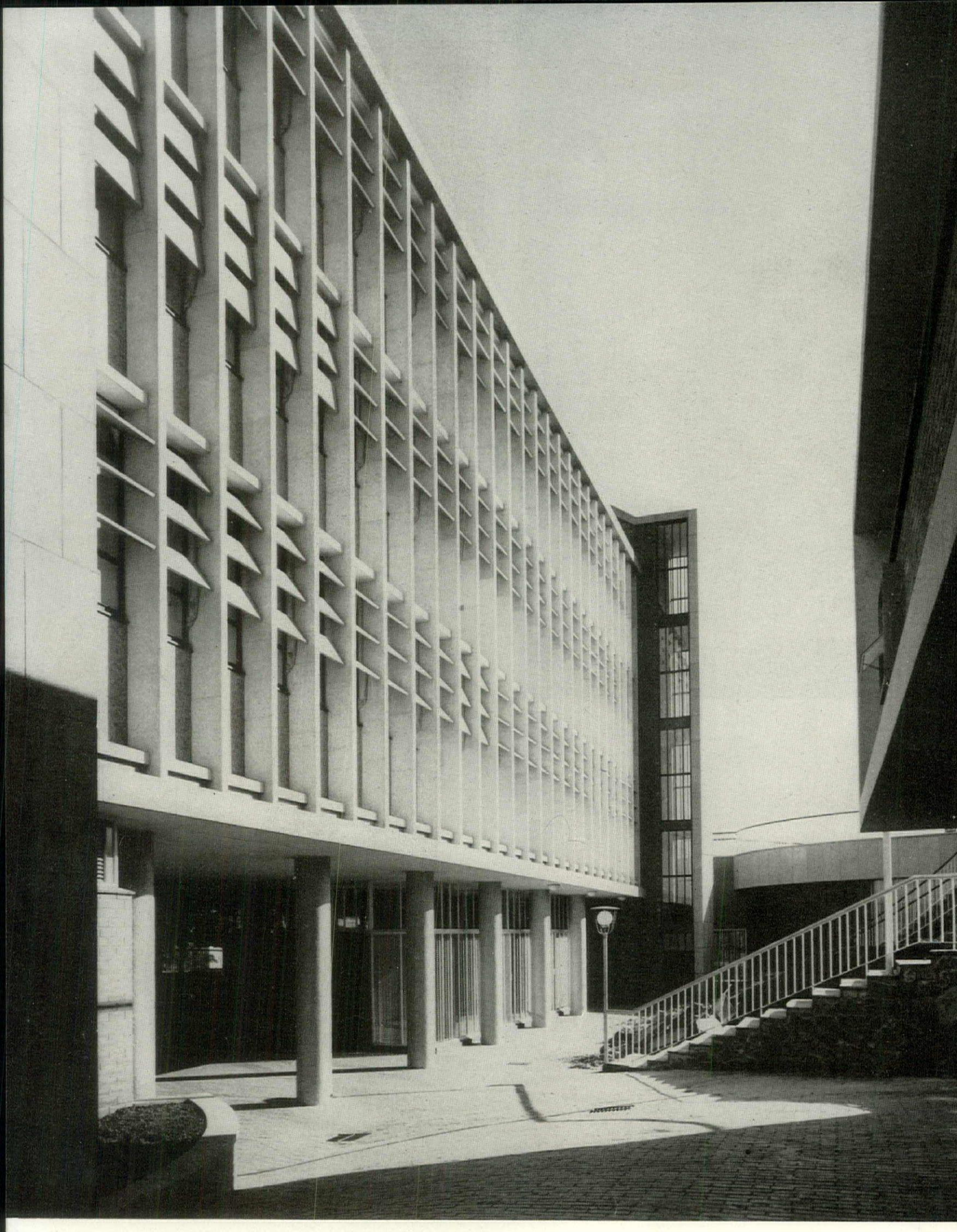
These diversities are not yet fully blended; but the result is beautiful and wonderfully fresh.

From just outside Detroit, the very citadel of modern ugliness, the fortress of violence, of excess, comes our new industrial landscape. Buildings of fully "industrial" character, but of human scale and human rhythm, are set in wide-open space among trees and waterways of what was once called our "promised land."

© *Ezra Stoller*



The choice of only four towers does injustice to others, e.g. Belluschi's Equitable Building, Harrison's UN Secretariat, and others unknown. But perhaps the main point has been established: one material, glass, used on one form, the tower, can result in four worlds as diverse as our Steel Doric, Crystal Kite, Persian Parallel and finally, our Oriental Prophecy, examples. Our critics are too often ready to proclaim just one world they think "human," deploring all others. Every artist creates a world; all together fill our world with wonderful new possibility.



Viewed from rear driveway, office building is at left, garage at right, curved board-room building beyond. Cars drive under raised building to get to garage.

MODULAR OFFICE BUILDING

It was put on stilts to create parking space and put on a 3′-5″ grid to promote floor-plan flexibility

This beautiful and deceptively simple office building in Pretoria, South Africa, appears to be little more than a box on columns. Like all truly simple solutions, however, it is the result of much detailed planning and looks the way it does for three good reasons: 1) its site is small, 2) sunlight control called for louvers, and a plain building mass called for additional surface patterns, and 3) its floor plan is changeable.

Location of the small site in a residential neighborhood limited the height to three levels above grade. This restriction accounts for the long, low character of the building; the smallness of the site (which left little space for parking lots and roads) suggested the openness of the ground floor to provide covered parking (11 cars) and access to the back-yard parking (nine cars). The generous landscaping (note the garden to the rear in plan below) keeps the building from intruding on the residential neighborhood and at the same time produces a pleasant atmosphere for workers.

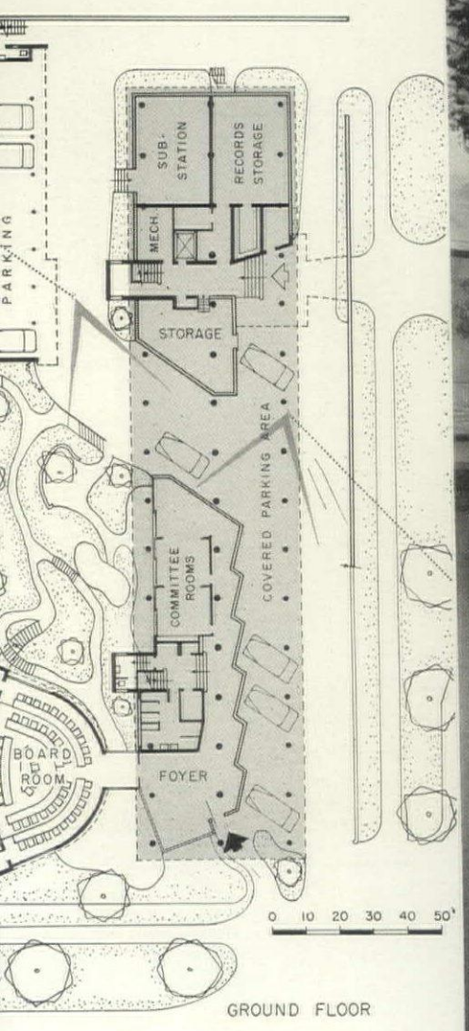
LOCATION: Pretoria, South Africa

H. W. E. STAUCH & PARTNERS, architects

Below: walls of louvered glass and solid masonry meet at southwest corner of building.

Bottom picture: visitors' parking is under office building proper.

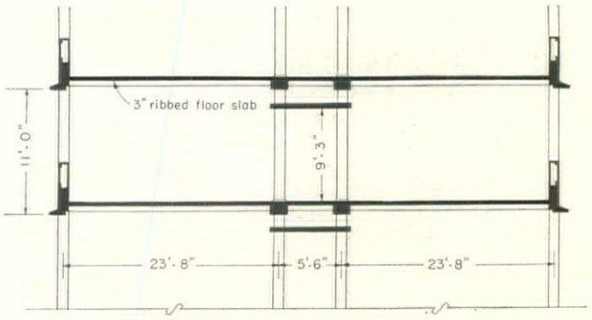
Alan Yates



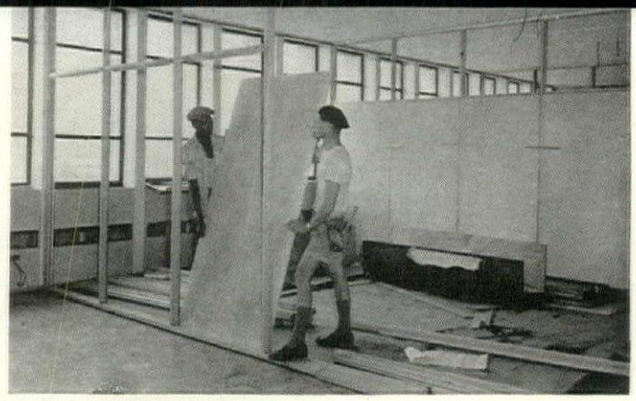
GROUND FLOOR

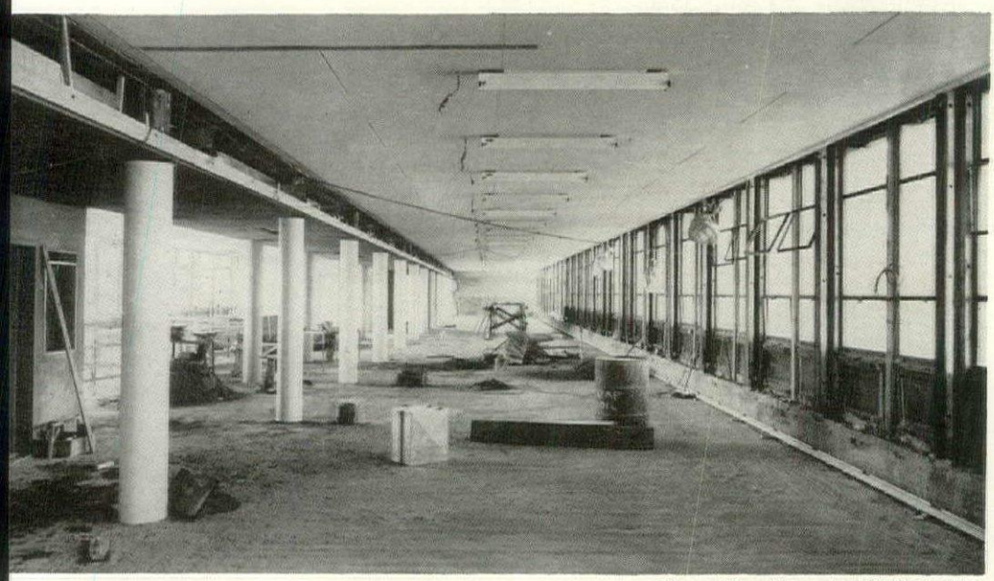


MODULAR OFFICE BUILDING



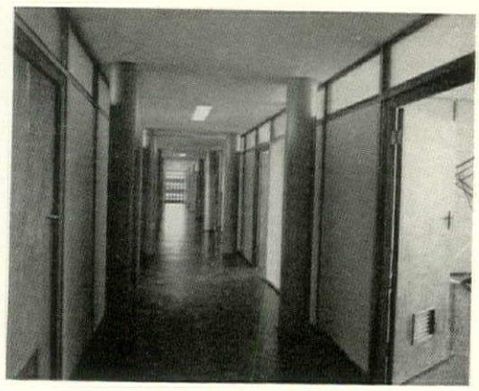
TYPICAL SECTION





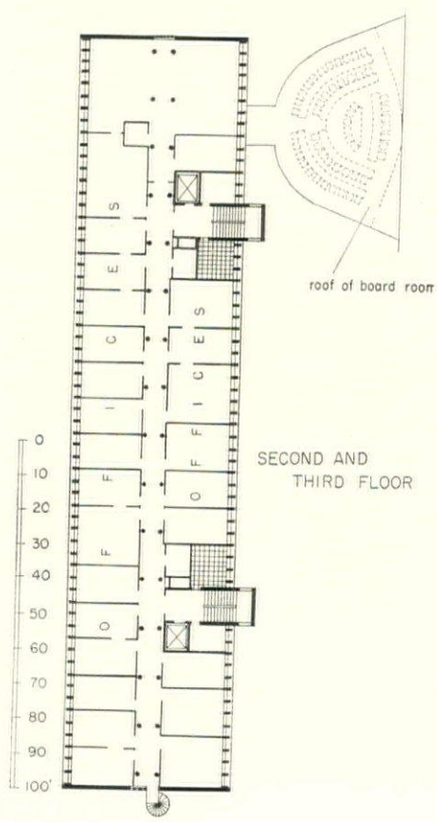
Photos: (above & top of p. 149) Martin Gibbs

Three views of building under construction show modular structure and plan as it works out in practice. The 3'-5" module is unusual, was determined by two factors: three modules less wall thickness equal 10'—a good office size; and one module can accommodate door units up to 3' wide. Note dropped air-conditioning ducts above corridor in picture at left.

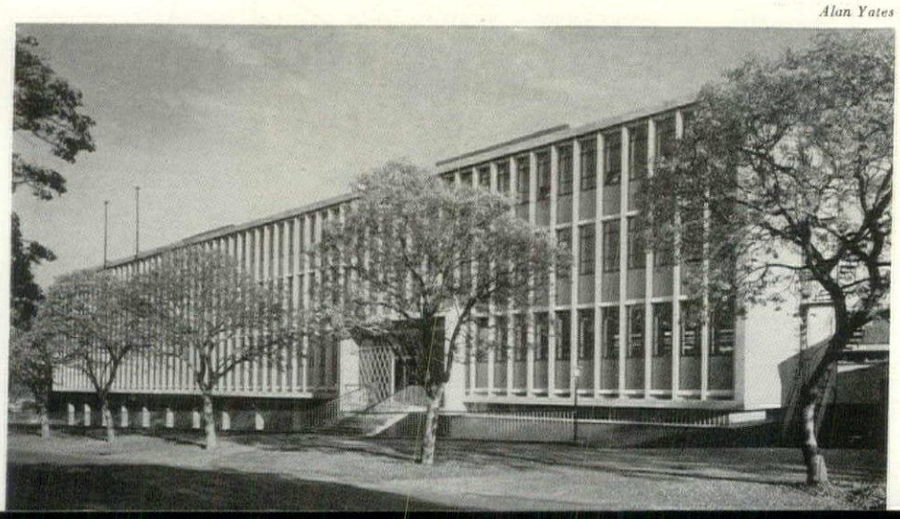


Inside and out, design was affected by a desire for light, colorful offices. Front and back walls are mostly glass, shielded by exterior fins and adjustable louvers. These precast vertical and horizontal sunshades are faced with white mosaic on areas exposed to weather. Set behind them are precast spandrels faced with contrasting bright blue mosaic. Precast concrete facing panels for end walls and coping are gray. Walls of the lower ground floor and retaining walls along boundaries and driveways sport dark purple facing brick. Exposed columns on the shaded ground-floor level are brightened with yellow mosaic facing.

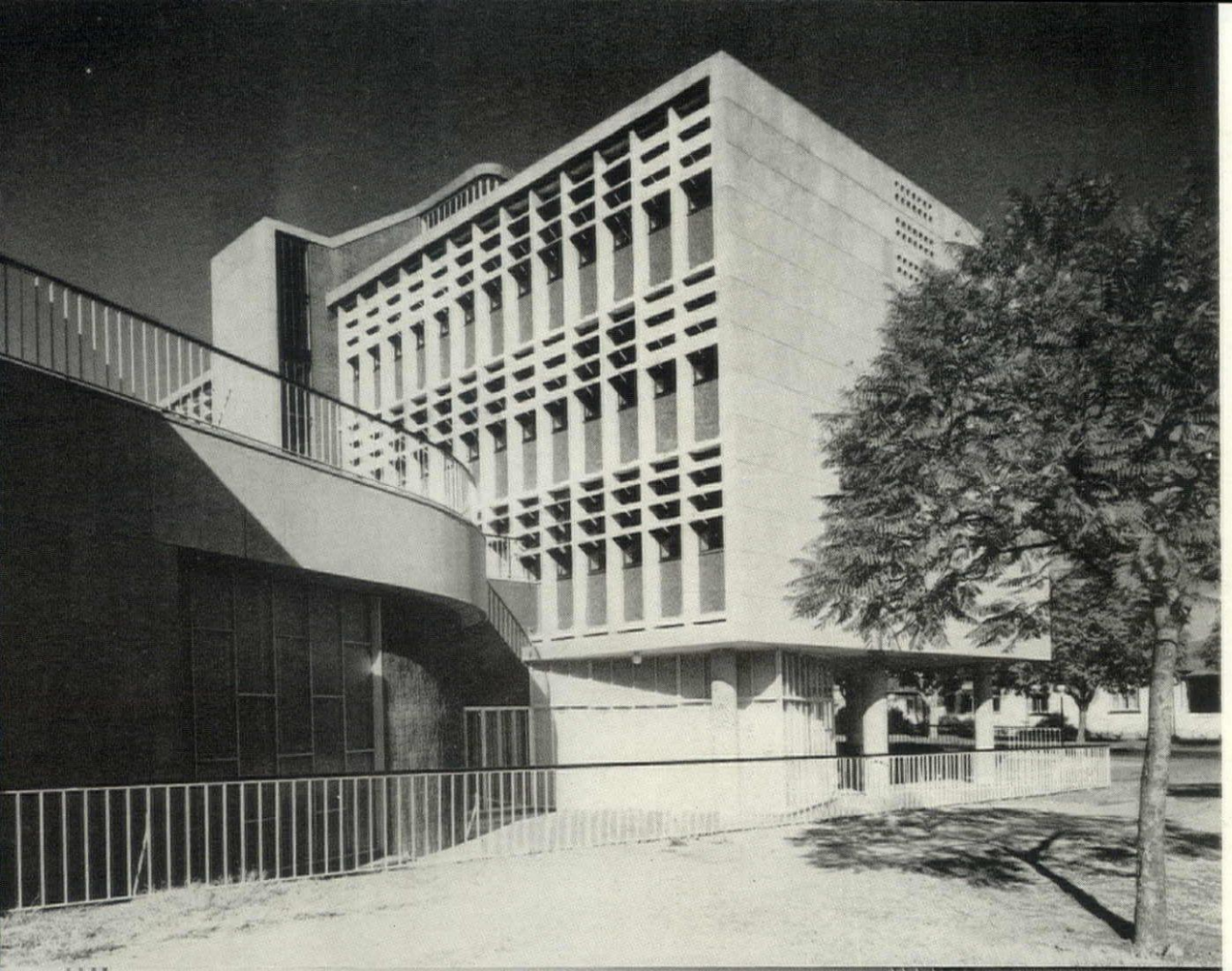
Finally, the plan of the building was dictated by the client's need for office space with maximum flexibility. This produced a 3'-5" module to which interior plan and exterior wall treatment conform. This particular module was chosen because, when multiplied by three, it (less a wall thickness) produces a comfortable 10'-wide office; one module provides for door-openings up to 3'-0"—maximum size needed for normal office use. The 3'-5" spacing of external vertical fins expresses the modular treatment with a definite rhythm and permits all office partitions to be 100% interchangeable. Thus, offices can be expanded or contracted as work requirements change.



Alan Yates



Main entrance is simple frame in louvered wall



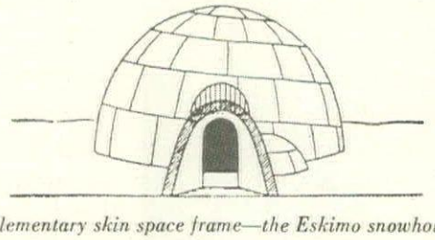


Parabolic board room is in semi-detached one-story building at rear of site. Isolation of this block insures quiet and privacy.

Foto Vasa

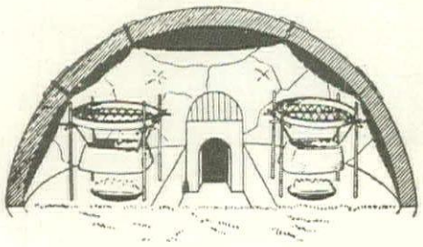
IS THIS TOMORROW'S STRUCTURE?

Space-frame enthusiasts marshal many reasons for predicting it is. Among the reasons: greater



Elementary skin space frame—the Eskimo snowhouse

(From Talbot Hamlin's "Forms & Functions of 20th Century Architecture.")

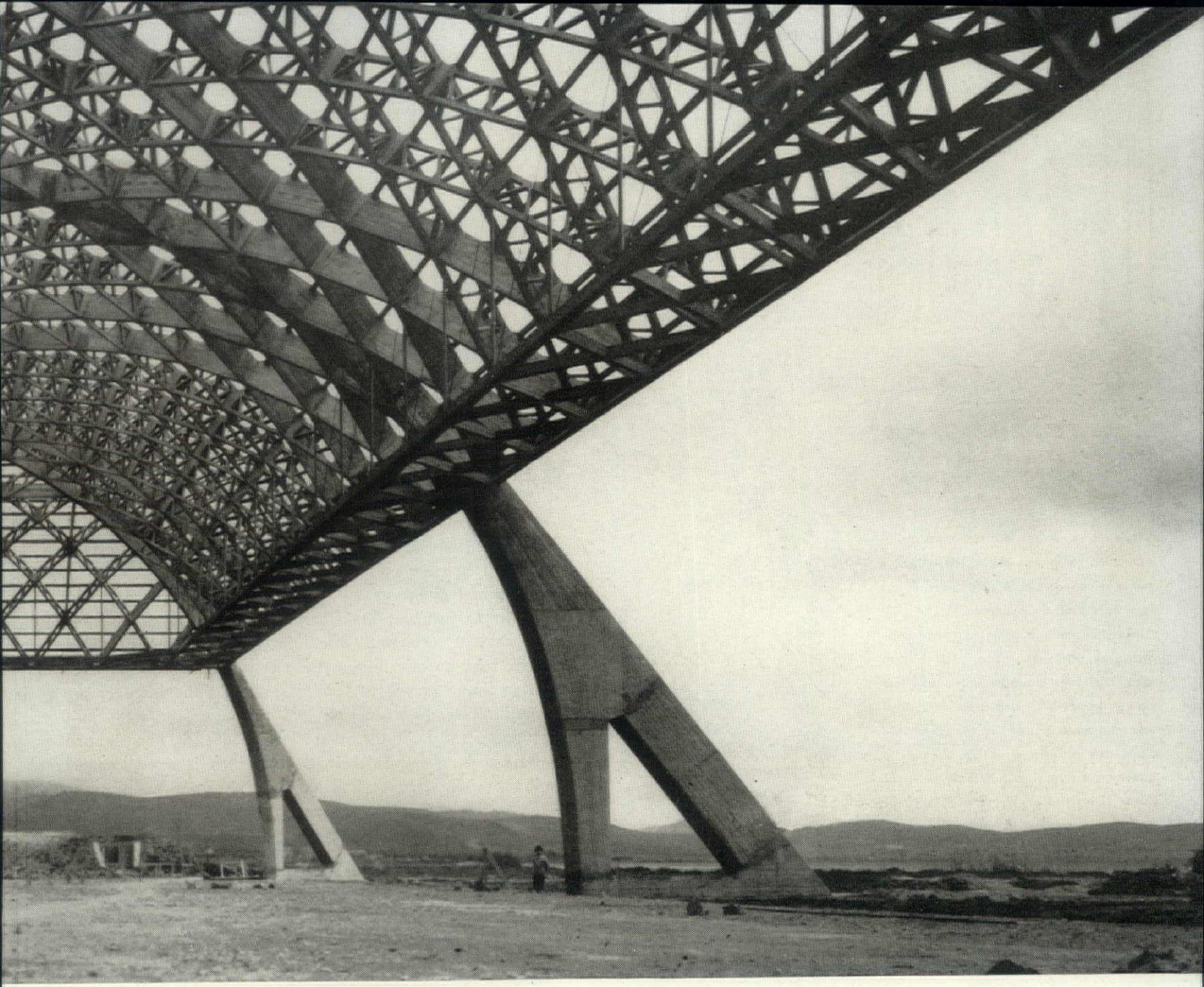


▸ With all our vaunted engineering, why are so very few of today's best buildings structurally as efficient and economical as the Eskimo igloo and the Neocene wattle hut?

▸ Why do none of our new building types match the economy of the Gothic vaults?

▸ How soon will builders erect the 1″ thick floor slabs which engineers are learning to design?

To frame a typical 20′ x 20′ bay in steel for a 200 lb. floor load requires from 10 to 15 lbs. of steel per sq. ft. because conventional design first runs all loads in one direction to the beam, in another direction to the girder and then transmits them at right angles to the column. The same bay could be supported with only 3 to 5 lbs.



This 20th Century version of a 13th Century vault is Architect-Engineer Nervi's 340′ x 135′ hangar near Rome, with only six supports. Each rib is a precast concrete truss, 10′ x 3′ high, with joints welded and grouted

lesign freedom, lower building costs, more exciting structure

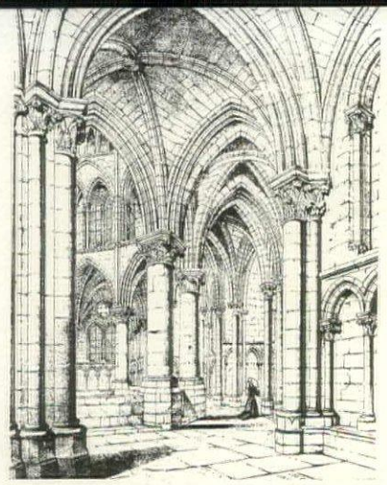
of steel if it were designed in three dimensions as is Engineer Nervi's spectacular concrete hangar roof.

For years this waste of steel has been justified on the grounds that US construction labor is so expensive that it is cheaper to frame a bay with five or seven big wasteful members than to frame it efficiently with a multiplicity of small members. But recently welding has been changing the dollars and cents balance between small-member and large-member framing. For example, the General Motors Technical Center (AF, Nov. '51) used its so-called "Zeppelin" trusses to get a stiffer frame at no extra cost.

Last summer one of England's foremost structural engineers, Felix J. Samuely, read to the Royal Institute of British Architects an extraordinary paper on the success and economy of three-dimensional design. Excerpts of this paper, defining the promising technique of space-frame design, are presented on the next page.

Curious to find no reference to US buildings among the score cited by Samuely as spaced-frame illustrations, FORUM editors set out to survey space-frame construction in this country. Not only did several such buildings turn up, but many top US engineers and architects proved quite knowledgeable and vocal on the subject. Their comments (along with their buildings) are presented on pp. 153-160 in the form of a symposium on the merits and implications of three-dimensional design.

Like Samuely, these leading professionals agree in pointing to three-dimensional space construction as the framework for tomorrow's buildings and suggest that the design revolution is already underway.



Ribbed vault *of Chalon cathedral in France is a fine example of three-dimensional design. Ribs were built first and all stones are in compression.*

SPACE FRAME DEFINED

Be it gothic vault or factory roof, it is a light economical structure that works in three dimensions

By Felix J. Samuely, British structural engineer

So that our buildings can be put down easily on the drawing board, each structural member together with its load is usually considered in one plane. This has necessarily restricted both architects and engineers. In medieval times, when buildings were not developed on paper to the extent that ours are today, the tendency to use structural members in only one plane was not so apparent. The Gothic vaults were really three-dimensional space constructions. Since that time and especially since the advent of iron and steel, simple plane constructions have been more or less the rule.

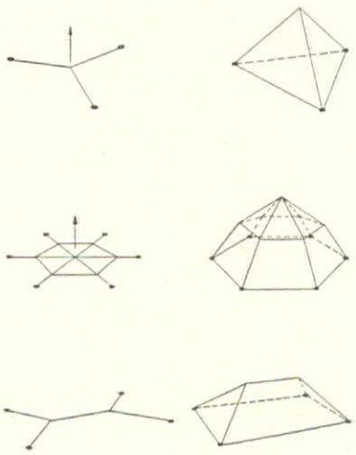
During recent years, space constructions have gradually begun to reappear. As a result, I believe we are on the eve of a great revolution. Hundreds of years hence, people will look back on this time as the one when construction changed over from "plane" to "space" and saw the birth of a new architecture.

Space constructions cannot be conceived in one plane; they have to be shown in their entirety either in several planes or in isometric. As we shall see, such design opens up entirely new fields of construction and planning.

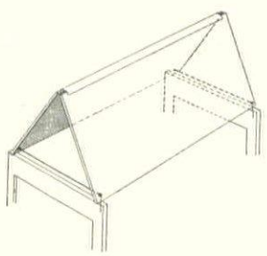
Visualize a space construction as a structure a giant could lift—like a piece of porcelain, it might crack but it would not disintegrate.

As the name implies, a space construction encloses space. More than that, it shares loads between at least three supports to avoid concentrated stresses at any one of them. Reactions are controlled within the space construction to result in only vertical loads upon the supports.

Both space frames and skin structures are space constructions. A true space frame is a three-dimensional structural skeleton, while a skin structure is a shell or slab which contains no columns or beams and whose skin is its own structural support. Thus a space frame is not necessarily a skin structure, but a skin structure is always a space frame.



Development of star beams into space frames.



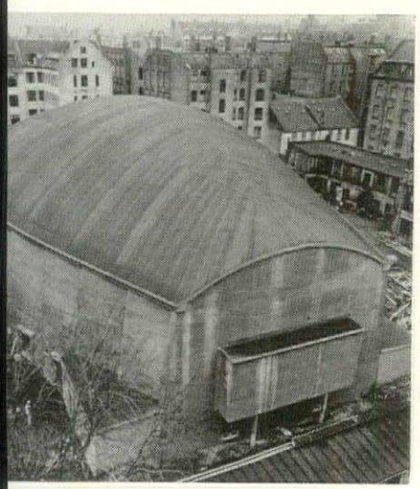
Principle of skin structures: *Load is resolved into components acting in direction of slabs.*

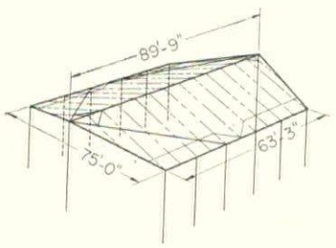
There are two kinds of space constructions: space frames and stressed skin structures. Both can be developed from star beams—beams having at least three supports in space. Consider a simple star beam having three arms rigidly connected in the center and supported at the three extremities (see sketches). Raise the center point and the beam becomes a space frame shaped as a three-sided pyramid. Now, assume the surface of this figure to be made solid with the star beam removed, and the skeletal space frame becomes a stressed skin structure, consisting basically of three "slabs" leaning one against the other. Similarly, if you take any star beam and raise one part of it, the skin between the framework becomes a structure that is capable of carrying itself over wide areas of considerable size and any desired shape.

No additional framework is needed to support skin structures, because where any two rigid planes or slabs intersect at an angle, the line of intersection acts as a beam. Consider a thin sheet of cardboard laid horizontally between two supports. If a vertical load is applied to the sheet, it would very soon collapse because of its extreme thinness in the direction of the load. But if the cardboard is turned upon edge, it would have a far greater resistance to the vertical load, which then acts in a direction of the structure's greatest depth.

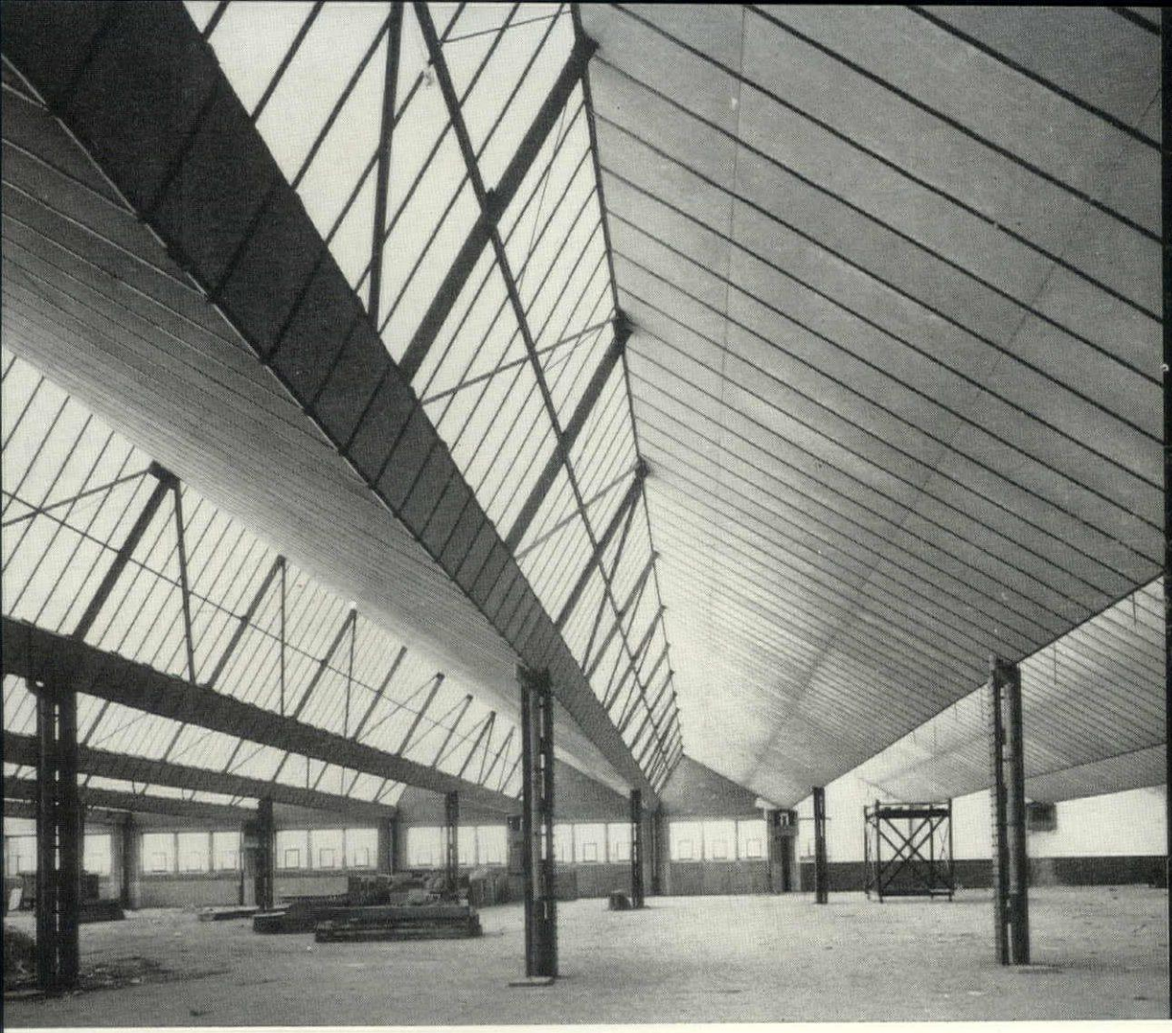
In practice it is impossible to arrange a single slab on edge, but the same purpose is achieved by leaning one slab against another, having the top edges continuously connected and the bottom edges held at each end against outward movement by tie bars or diaphragms. The unsupported intersection or fold at the center is in effect a beam and can take considerable vertical loading (see sketch). The load is resolved into two components in the direction of the plane and greatest depth of each slab, and is carried to the supports. In fact, the surface of each slab becomes a stressed skin.

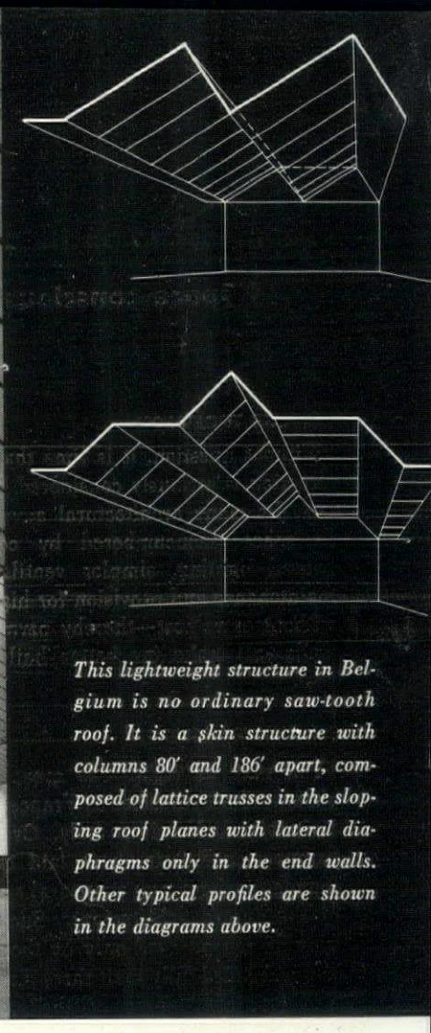
Skin structure roof *of Copenhagen theater is doubly-curved shell concrete. Smooth outer shell is 4¾" thick, inner shell 2½" thick and undulated for acoustic purposes. Architect: Wilhelm Lauritzen.*





Latticed steel space-frame *assembly hall of Woodberry High School in London. Engineer: F. J. Samuely. Similar concrete structures have been built in US and Europe.*





This lightweight structure in Belgium is no ordinary saw-tooth roof. It is a skin structure with columns 80′ and 186′ apart, composed of lattice trusses in the sloping roof planes with lateral diaphragms only in the end walls. Other typical profiles are shown in the diagrams above.

The art of skin structures therefore is to arrange the members so that forces occurring at right angles to the skin can be resolved into components acting in the plane of the skin.

The closer the folds of intersecting slabs, the smaller become the local bending moments, for the load is transmitted to the folds of the slab. When the edge of the system is finally reached, there is normally no line of intersection with a further slab. Here an edge beam or row of columns must be provided or an additional slab may be cantilevered out to create a beam at the last line of intersection.

Developing this principle, almost any shape of roof can be constructed to suit the architect's requirements. It is just as easy to construct a roof that is concave as one that is convex. Concave roofs are sometimes very valuable for acoustic purposes in halls and theaters. (Two of the outlines that can be adopted are sketched above. Note the diaphragms which can be seen quite plainly at the ends of the structures.)

The system will not stand up without a diaphragm or tie member. The diaphragms, which are shaped to follow the outline of the roof, can either be solid or latticed, of concrete, metal or timber. The skin structure and the diaphragms act together as one unit. Where a roof consists of more than two slabs, a tie member at the end is not as effective as a diaphragm. Each intersection beam should be supported at the ends. A diaphragm supports all beams, whereas a simple tie holds only the two beams to which it is directly connected.

Any of these prismatic or hipped roofs can be built in latticed steel, aluminum, concrete or timber. Reinforced concrete engineers have been most active in advancing stressed skin structures and have exploited the principle in a wide variety of flat and curved shell surfaces. In recent years shell concrete construction has become so commonplace that there is a danger of architects considering it the only possible skin structure.

In all skin construction shear is of paramount importance. In most cases this must be carried by steel. Reinforced concrete is therefore unsuitable for wide-span skin structures, unless it is prestressed to reduce diagonal tension. I predict that, when latticed skins are more developed than they are now, ordinary reinforced concrete will be preferred for spans only up to about 30′ and that latticed steel and prestressed concrete will be used for all larger spans.

The space frame frees planning from the influence of construction. Buildings are generally planned with an axis because normally the structure requires it. The open theaters built by the Greeks looked entirely different in plan from the theaters built later which had roofs over them. This indicates clearly that the need for a roof construction influences the planning. With space frames and skin structures the architect need not consider this, and planning can start from an entirely different aspect. By a form of prestressing, it will be possible to have thin slabs spanning large distances.

To give an instance of what will become possible, take an ordinary round bowl and place a towel over it. The towel can not now carry any load, but stretch the towel tightly, hold it firmly in position and it can then carry certain loads, although it is the same towel.

Nothing of this nature is being constructed at the moment, but I have calculated that in this way it should be possible, although not economical at present, to span a 1″ slab over an area of 20′ x 20′ without supports. I am not putting this forward as a recommendation but as a pointer for the future.

SPACE FRAME DISCUSSED

A symposium on its present uses and future implications by 19 space-conscious engineers and architects*

ISADORE THOMPSON

"Without question, it is time that space construction is seriously considered by the architect. Its many architectural advantages such as space unencumbered by columns, improved lighting, simpler ventilation, easier maintenance and provision for higher ceilings without extra cost—thereby permitting lower walls—all make for better building at less cost."

DR. WALTER GROPIUS

"You may be right. The great modern engineers like Freyssinet in France, Maillart in Switzerland, Nervi in Italy, Ove Arup and Samuely in Britain, have laid the scientific foundation for a new structural space concept of the future architecture. Such structural systems can be used only by those who have comprehended fully their three-dimensionality. The present training of the architect—too theoretical and without the balancing influence of direct practical experience in building—has resulted in 'drafting-board architecture,' developed in the 'flatland' of plan and facade."

DR. J. J. POLIVKA

"Today we have two separate building professions, architects and engineers. In most cases a building is commissioned to the architect and the engineer is not called in until the general design is completed, after which he must prove by calculations that the design of the architect is safe and in accordance with the building code. In my opinion, it is essential for the engineer to collaborate with the architect at the outset of the design and be coresponsible for the basic layout."

E. F. MASUR

"The case in favor of the new structural techniques advocated by Samuely is an impressive one. In order to realize this, it is necessary to understand the basic absurdity of the common stringer-beam-girder-column construction. Under present construction methods, the loads are carried by the stringers and transferred to the beams, thence to the girders, and are finally brought down to the ground by means of the columns. While this 'division of labor,' at first glance, appears reasonable, the total of all loads carried by all members of the structure actually represents a multiple of the loads to be supported. In other words, we do not have an actual 'division' of labor; rather, we are faced with a 'superimposition,' a duplication and triplication of labor. This is about as economical as if three men carrying a piano would perform their task by climbing on each other's shoulders, with the top man actually holding up the piano. This may seem ridiculous; yet, this kind of circus act is performed by most of our structures.

"Some half-hearted attempts at a proper division, rather than duplication, of labor have been introduced through the use of 'two-way' slabs and the like. Nevertheless, while a certain amount of superimposition seems inevitable, it is by space-frame construction that the optimum strength of a structure is achieved."

PAUL RUDOLPH

"The forms which grow logically from Samuely's conceptions have not yet been fully developed. All too often they are thought of in terms of spanning space alone rather than as complete structures. Thus, many times the ele-

*** THE PANEL**

Isadore Thompson,
Structural Engineer, San Francisco, Calif.

Dr. Walter Gropius,
Architect, Cambridge, Mass.

Dr. J. J. Polivka,
Consulting Engineer, San Francisco, Calif.

E. F. Masur,
Associate Professor of Civil Engineering, Ill. Tech.

Paul Rudolph,
Architect, Sarasota, Fla.

Prof. K. Hruban,
Structural Engineer, Brno, Czechoslovakia.

John J. Driskell,
Structural Engineer, Pasadena, Calif.

Prof. Walter C. Voss,
Dept. of Building Engineering & Construction, M.I.T.

Prof. J. M. Garrelts,
Dept. of Civil Engineering, Columbia University.

Edward A. Verner,
Structural Engineer, San Francisco, Calif

Prof. George Winter,
College of Engineering, Cornell University.

J. H. Whitney,
Architect, New York.

R. Le Ricolais,
Structural Engineer, Paris, France.

R. Buckminster Fuller,
Structural Designer, New York.

Konrad Wachsman,
Head, School of Design, Illinois Institute of Technology.

Fred N. Severud,
Structural Engineer, New York.

Eduardo Catalano,
Acting Head, School of Design, North Carolina State College.

SUMMATIONS

Leonard Michaels
Architect and Mathematician, San Mateo, Calif., author of Contemporary Structure in Architecture.

Felix J. Samuely
Consulting Engineer, London, England.

© Fuller Resea



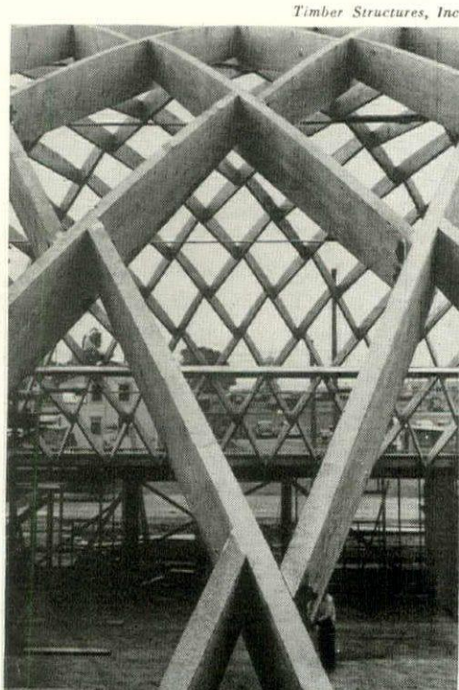
Geodesic domes *designed by Buckminster Fu ler can span 300' with only 1 lb. of aluminu struts per sq. ft. of area covered. His floor tru (AF, Nov. '52) based on three-sided pyramids cu floor steel for 20 bays down to only 4 lbs. p sq. ft. Both demonstrate the value of repetitiv three-dimensional construction.*

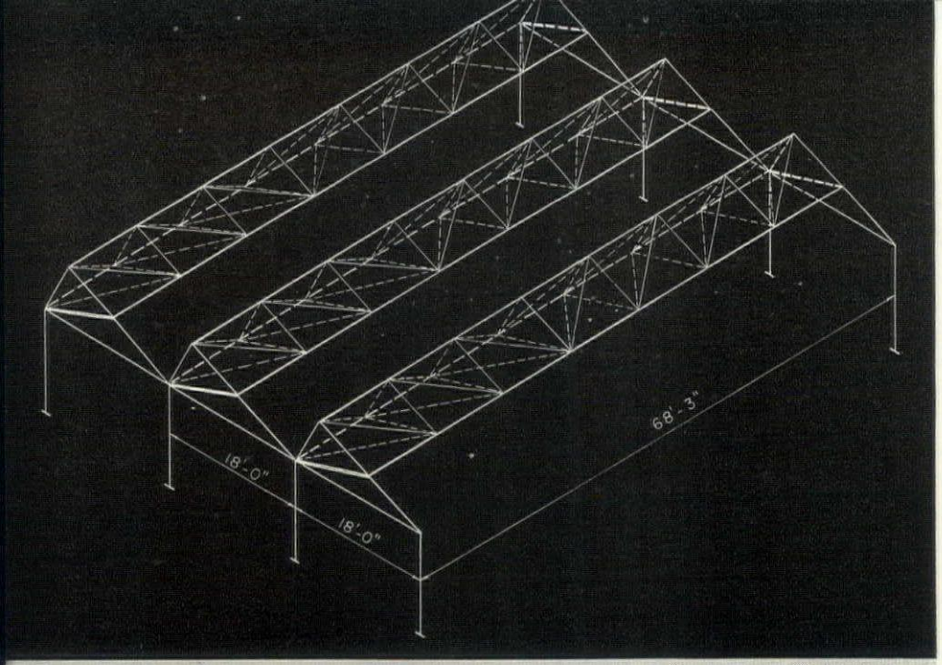


Forty foot square roof *for school in Berkshire England, is made of precast concrete segment bolted and grouted together. Architects: Bridg water & Shepheard; engineer: F. J. Samuely.*

Lamella roof *in timber over Eugene Sport Arena, Ore., uses diagonal grid to distribute load uniformly to buttress supports. Architects: Laur ence & Holford; engineers: Blood & Williams*

Timber Structures, Inc

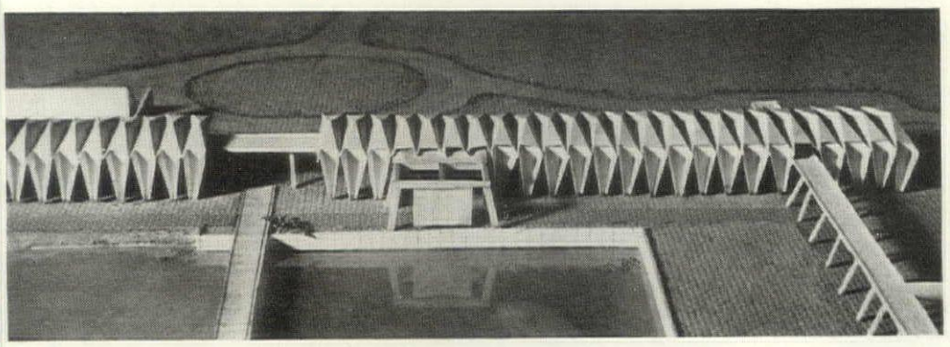


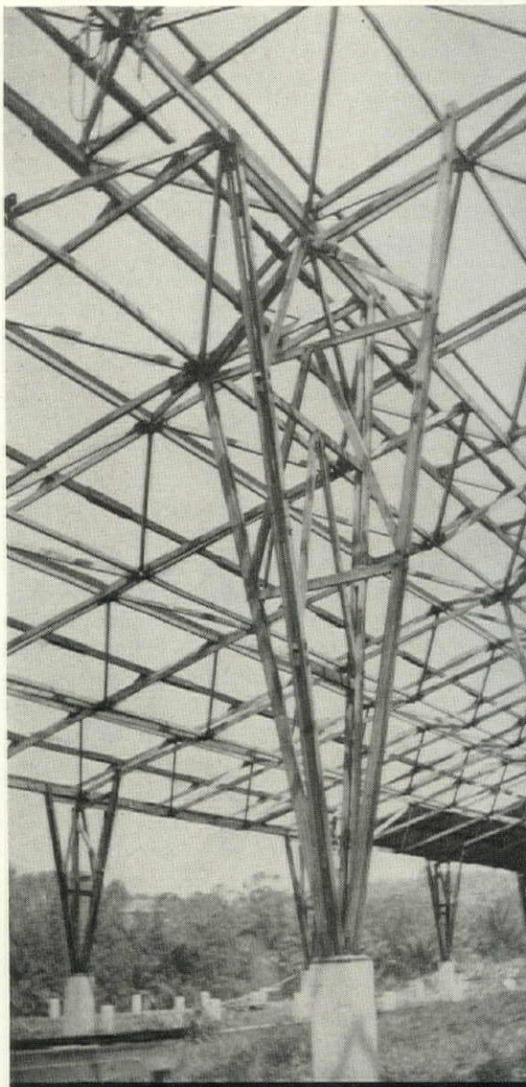


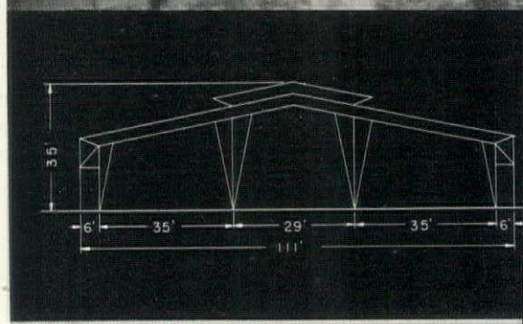


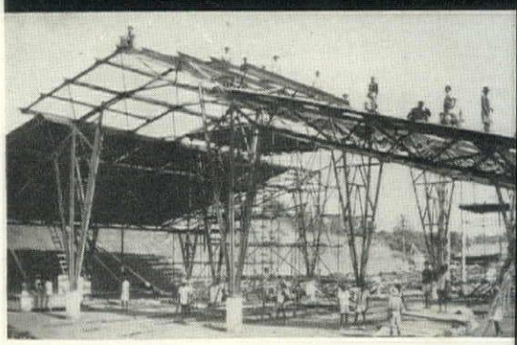
Triangulated steel space frames *span 68′ in factory at Byfleet, Surrey, England. Three-sided pyramidal units are welded together and each truss is erected as a complete unit to make temporary bracing unncessary. Architect: H. J. Spiwak; engineer: O. Safir.*

Molded plywood, *like all sheet materials, develops remarkable strength when corrugated. Under the guidance of Architect Paul Rudolph, students of the U. of Penn. have designed a system of vaults from prefabricated panels made of ¾" insulation between two ½" plywood sheets. These are shaped into two-hinged arch bays, 5′-2" wide, 10′ high and spanning 32′ with thrust taken by tie-rods set in a concrete floor slab.*









Warehouse in Africa *by Engineer Le Ricolais is framed with bents 32′ apart. Use of three-dimensional structural panels permitted 700 sq. ft. of roof structure to go up each day and required minimal materials. Side sections were assembled on ground raised in place; center section was built in place.*

vations and their treatment bear little relation to the structure as a whole. The Mondrian-like pattern of so much of our current architecture will be routed if architects find answers to Samuely's proposals. Samuely has dealt Mondrian a mortal blow!"

PROF. K. HRUBAN

"There were times when a three-dimensional ceiling construction was considered an essential part of the architecture of an interior. Up to the 18th Century not only cathedrals, palaces and town halls, but also ground floors of inns and larger houses were generally conceived in space.

"Only with the development of reinforced concrete was it possible to exploit three-dimensional design without the structures becoming too heavy and too expensive. The difference in weight between ancient and modern domes is striking. For instance, the 140′ span at St. Peter's, Rome, weighs 10,000 tons, while the dome roof of a new factory hall in Jena, Germany, also 140′ span, is of shell concrete only 2.36″ thick and weighing under 300 tons—i.e. 3% of the former. Costs of these two domes would be in a similar proportion. How far this renaissance of three-dimensional systems will go will depend, in my opinion, upon the development of fresh fabrication methods and construction site procedures."

PROF. WALTER C. VOSS

"One reason why folded-slab concrete construction [called 'hipped-plate' construction here] has not spread very rapidly is, no doubt, due to our lack of any adequate practical method of stress analysis. One important question still to be resolved is the magnitude of secondary stresses due to joint displacement. Both theory and tests of metal models indicate that the secondary stresses may be quite large and unpredictable except by much involved and time-consuming analysis."

PROF. J. M. GARRELTS

"In the US we have frequently used space structures without giving much publicity to them. One of the greatest difficulties seems to be in the making of satisfactory connections and, in regard to hipped-plate construction, with the control of shear at the bottom edges of the slabs."

J. J. DRISKELL

"We have successfully employed folded slab construction out West, with the complete elimination of beams and girders. The first of these was a church roof 53′ wide by 97′ long built of two 6″ lightweight concrete slabs, leaning one against the other at an inclination of 3 in 12 and having full continuity down the 97′ long ridge to form a two-hinged arch.

"It was amusing to hear the workmen on this job explaining to each other that such a crazy structure with no beams or columns couldn't possibly stand up once the shores were removed. Yet maximum vertical deflection of the ridge under dead load was only 9/16″, and the cost of the slab in place (completed 1950) was under $1 per sq. ft.

"In March, 1952, I had another chance to design a stressed skin space structure, with 5″ thick pitched slabs for a roof 45′ wide by 117′ long using 3,000 psi lightweight concrete (95 lbs. per cu. ft.). It seemed logical to prestress the slabs and we prepared alternate designs for prestress vs. conventional reinforcing. The bids came out 40% in favor of prestressing. Cost of the prestressed job was under $1.50 per sq. ft.; maximum deflection at the ridge under dead load, ¼″."

EDWARD A. VERNER

"In 1938 we built a gymnasium with spans of 36′ x 60′ using pitched plate construction, although the undersides of our slabs were ribbed. Our practice in working out unit diaphragm shear at gable ends of such a pitched roof is to divide the total vertical load by eight times the rise. This seems to work out quite well.

"Samuely's star beam arrangements reveal a saving in weight of 5 to 10% when compared with conventional orthogonal framing, while moment stiffnesses (independent of torsional) are the only problem of the designer beyond devising the moment connections at angular joints."

J. J. DRISKELL

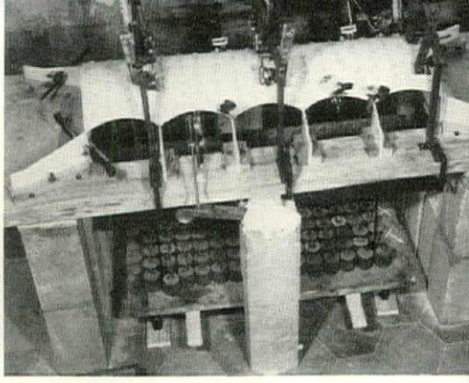
"My own experience confirms Samuely's opinion regarding shear in pitched-plate construction. Incidentally, in his book, *Design of Prismatic Structures*, A. J. Ashdown recommends that such roofs be not more than about 4″ thick, which would limit the spans to about 40′ wide and 60′ long. However, he appeared to be thinking of standard concrete instead of the lightweight concrete we have successfully used. From our experience with lightweight concrete we believe the optimum pitch to be 4½ in 12 and that the maximum economic size of such roofs is about 60′ wide by 120′ long.

"We have also designed a multiple-span roof structure for a five-acre industrial building, again using pitched-plate construction. Our lightweight concrete slabs will be 5″ thick spanning 64¼′ for five continuous bays with columns 50′ apart along the valley lines. End diaphragms will be above the plates on column lines for all interior bays and below the plates in exterior bays. Two contractors have given preliminary estimates on this design, both under $1.10 per sq. ft. The roof will be prestressed in two directions.

"Regarding pitched-plate roofs of latticed steelwork, they appear to be considerably more economical than main steel framing members unbraced in the third dimension, but our cost estimates still ran about 30% more than for the equivalent structure in reinforced concrete."

F. J. SAMUELY

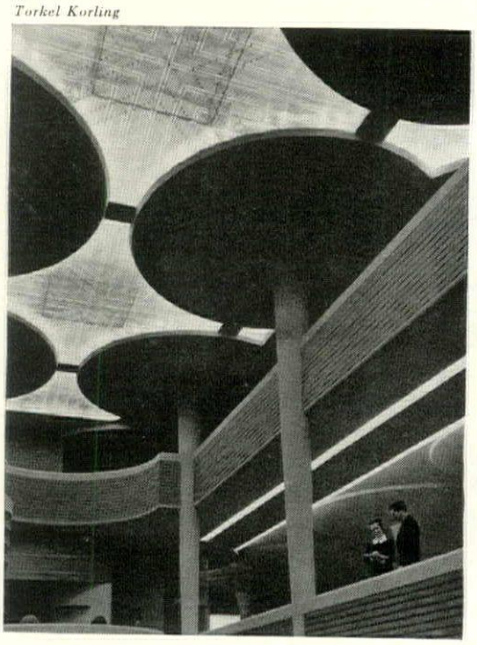
"I am rather interested in Driskell's economic comparison. I quite agree that with reinforced concrete the same loads can be carried more cheaply than with steel, but we find that with roof construction the concrete work



Petraroli Eugenio

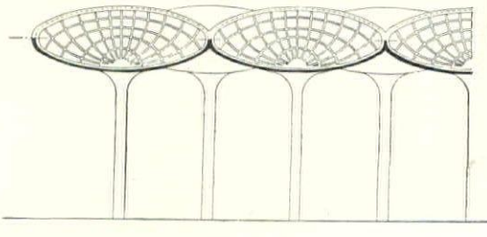
Three-dimensional design *is not held up by difficulties of rigid mathematical analysis. Where complete analysis proves controversial, engineers resort to loading scale models to determine deflections. Above, the technique is applied to the Flower Market at Florence by Architect Giuseppe Gori and Engineer Emilio Brizzi. Vaulted roof is of prefabricated tile sections; buttresses and thin arch spring lines are poured-in-place concrete. Span is about 90′. Tiles are 8″ thick, weigh 48 lbs. per sq. ft.*

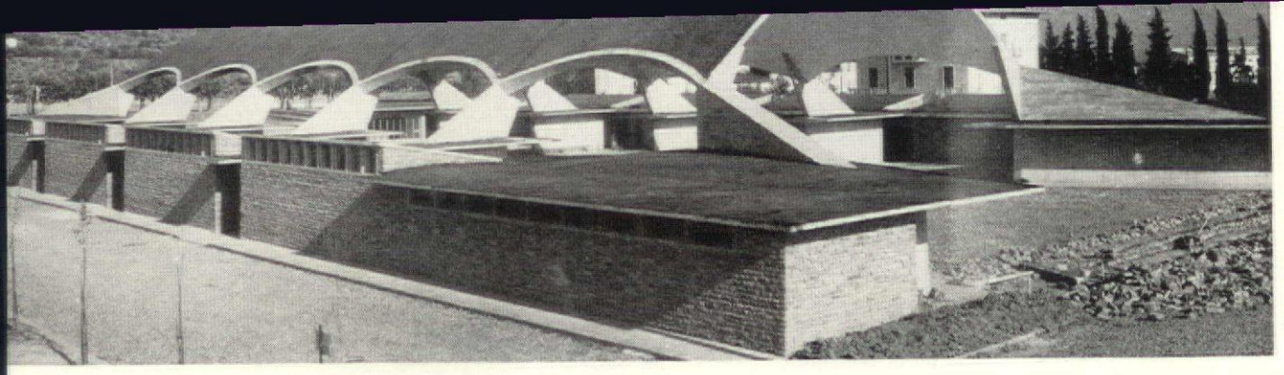
Torkel Korling

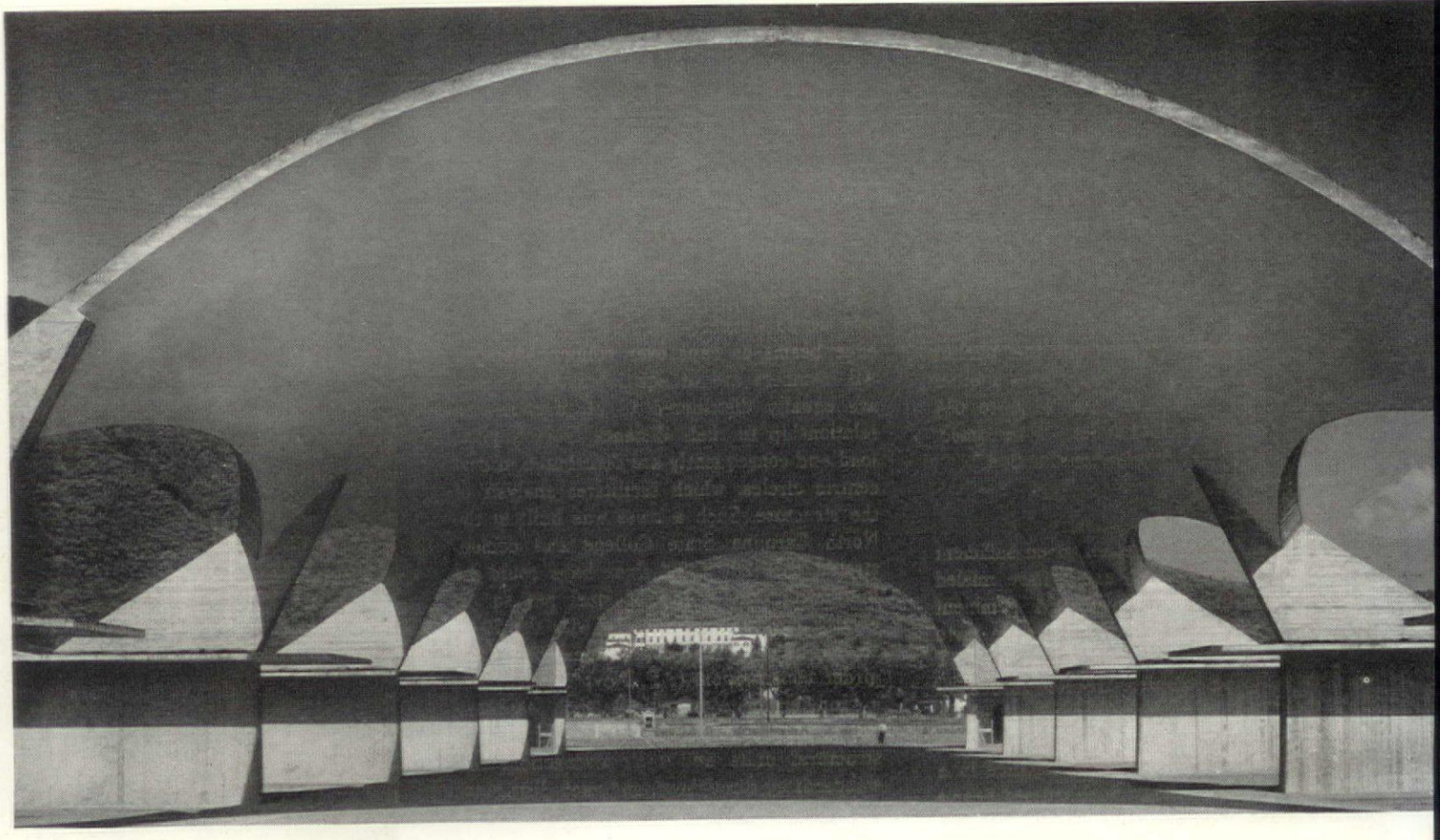


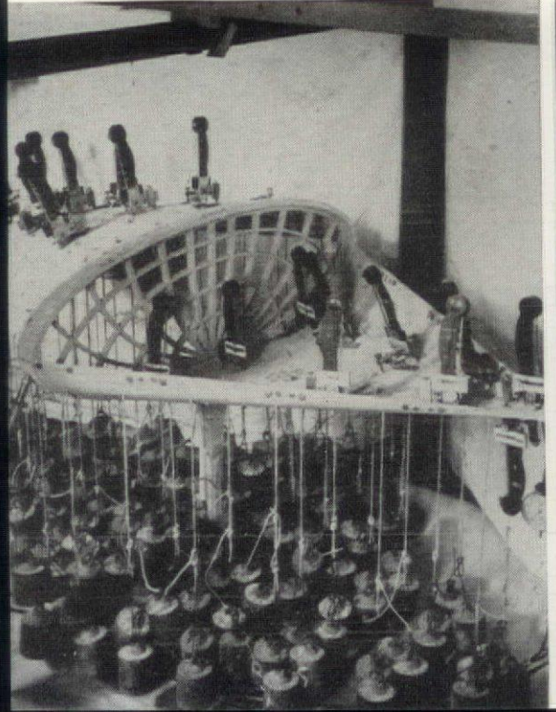
Mushroom columns *at Frank Lloyd Wright's administration building for the Johnson Wax Co., Racine, Wis. are hinged at the base. Each concrete column attains lateral stability through mutual support with its neighbors.*

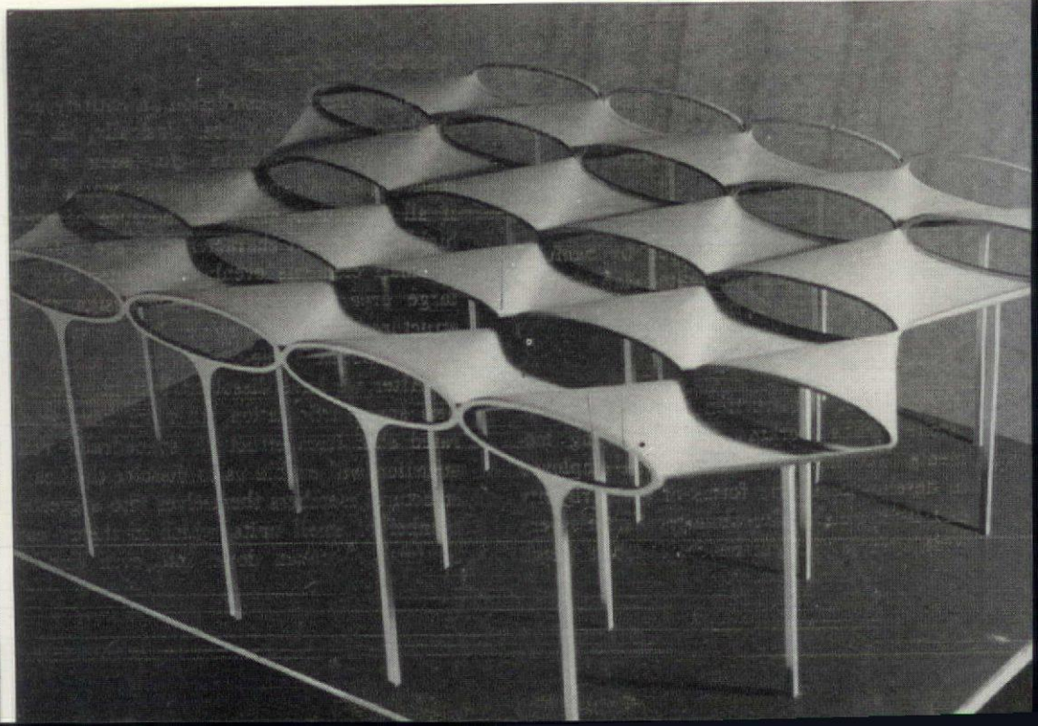
Unique northlight roofs *are designed for the University City of Tucuman, Argentina. Each conical roof segment of 3″ shell concrete is shaped by the upper and lower halves of oval concrete trusses. These are supported on tapered columns hinged at the base, spaced on a 70′ triangular grid. Oval trusses will be glazed; downspout will be placed in each column. The structure was conceived by Architect Horacio Carminos and Engineer Antonio B. Aracibia. The 1:25 scale model was tested by Engineers Nervi and Bartoli.*











is so much heavier that steel becomes much cheaper for long spans.

"Several wide span-hipped roofs have been built in England using a latticed steel girder in the plane of each slope, an arrangement which permits great flexibility in column spacing and top lighting. In London, a 76′ span school assembly hall of this construction has the roof rising from the sides to a center ridge. Only the eaves beam is latticed and is suspended by hangars from the gable ridge. This is equivalent to latticing the whole area. The latticed girders disappear into the roof itself and are less obtrusive than in conventional construction."

PROF. GEORGE WINTER

"It seems to me that the school assembly roof Samuely describes is likely to be cheaper in standard truss-and-purlin construction. It appears to be supported by the sloping members which represent either single or two-span beams of about 40′ span. The diagram (p. 152) shows they weigh 44 lbs./ft.-run, more than 7 lbs./sq. ft. Compared to this, in standard truss construction the purlins might weigh 3 lbs./sq. ft., the trusses another 3 lbs./sq. ft., making a total of 6 to 6½ lbs./sq. ft. Thus this roof appears to be considerably heavier than regular construction."

F. J. SAMUELY

"I am afraid that I have not given sufficient information on this roof and I have misled Professor Winter into making a comment that is prima facie correct and yet de facto incorrect.

"If I had had complete freedom in designing this roof, the sloping members which weigh 44 lbs./ft. would have been replaced by trussed beams, as used for instance in a workshop in Lancashire. Such trussed beams would have weighed only 15 lbs./ft. but would have been 24″ deep. The architect, however, purely for reasons of lighting, insisted on having a false ceiling not more than 12″ below the roof, and so the depth of the beams was reduced to 12″—a waste of 4 lbs./sq. ft. if considered from a purely structural point of view. The roof weighs 10 lbs./sq. ft. and would have got down to 6 lbs./sq. ft. if it had not been for the architectural requirements, which in any case are incompatible with trusses. The weight could have been further reduced if we had been allowed to produce a roof with three 'kinks' instead of only one in the center."

J. H. WHITNEY

"These pitched roofs described by Samuely might be likened to a corrugated slab with the corrugations acting as beams."

R. Le RICOLAIS

"Space-frame construction is not limited to pitched slabs working under bending moments. The same principles can be employed to develop geometric forms of great rigidity and light weight. Buckminster Fuller's very wide span, aluminum geodesic domes weigh only 1 lb./sq. ft. of area covered. Using similar three-dimensional timber construction for warehouses in French Equatorial Africa (see p. 155) we achieved 35′ spans with only 0.7 lbs. of metal and 0.1 cu. ft. of timber per sq. ft. of area covered. Our three-way modular design and construction made for great economies in building time as well as in materials; the entire 66,000 sq. ft. warehouse went up at the rate of 700 sq. ft. a day.

R. BUCKMINSTER FULLER

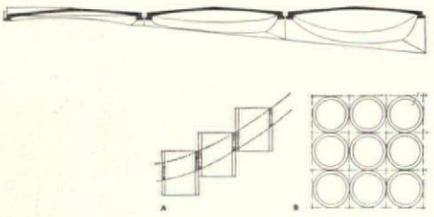
"Samuely's star beams demonstrate the basic structural unit of 'energetic geometry,' because the tetrahedron (a three-sided pyramid) encloses the least space with the most surface and is the stiffest form against external pressures—just as the sphere encloses the most space with the least surface and is the stiffest form against internal pressures. Using such tetrahedrons as modular space-frame units, they can be welded into a three-dimensional floor truss that acts in the same way as flat-plate construction in concrete, and would similarly eliminate the need for edge beams or caps over column supports. All members are of equal length. Stresses are equally distributed to all members in relationship to their distance from a point load and consequently are distributed in concentric circles, which facilitates analysis of the structure. Such a truss was built at the North Carolina State College and demonstrated that 20′ x 20′ floor bays could be built with only 4 lbs. of steel per sq. ft. of area covered as compared with the 10 to 15 lbs. used in more conventional beam and girder construction (AF, Nov. '52, p. 149).

"Indeterminate structures such as these prove highly economical because all the structural units and their connections are standardized throughout, and each distributes loads proportionately to all other units. Consequently, if high local stresses occur at any one point they are relieved by the rest of the frame, and although stresses at some points may exceed nominal stated limits, the collapse load of the whole structure is considerably greater. This characteristic of space frames has long been appreciated by aircraft designers; it seems a pity that we cannot yet do the same in building."

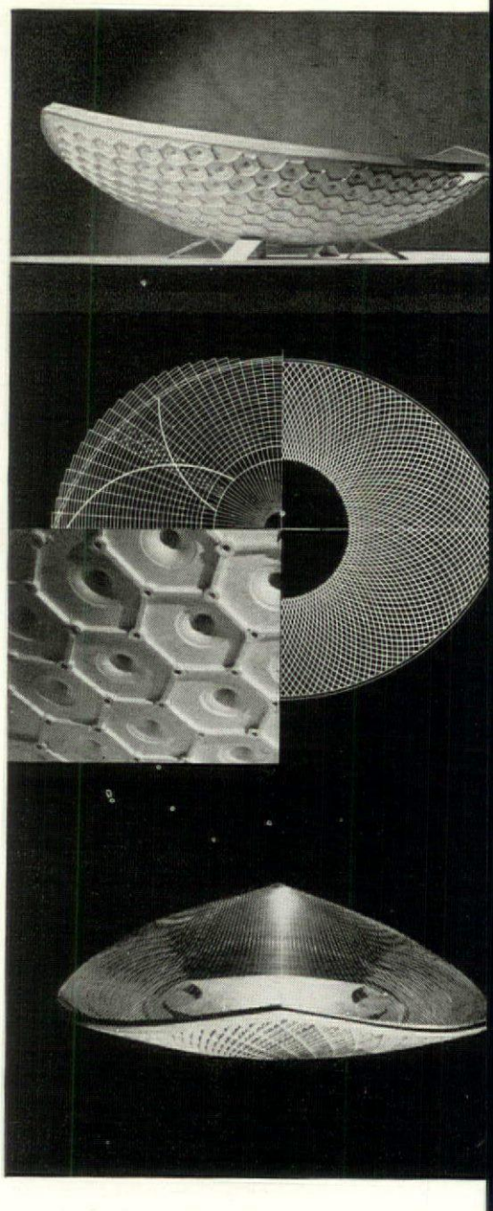
KONRAD WACHSMAN

"In space-frame construction an entirely new thinking must take place. Basically, all vertical supports, columns, etc., seem to be inadequate. A space structure works best if all structural members, because of their highly redundant characteristics, are reduced to small elements evenly distributed over a large area. One can hardly design these structures on paper alone, but must work with elaborate three-dimensional models.

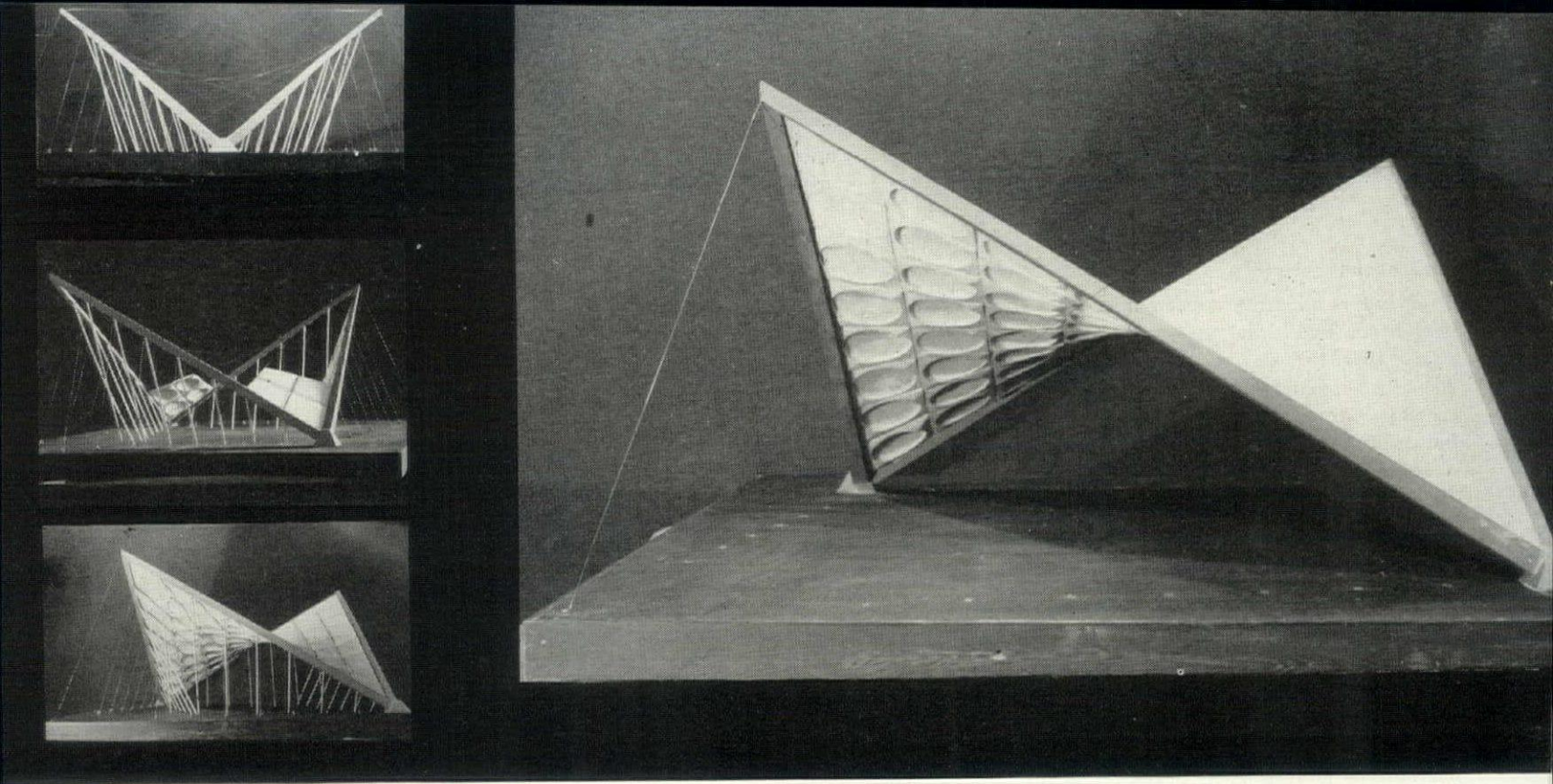
"After we have dissolved buildings into a new space articulation, after we have separated skin from structure, space-frame construction will enable us to dissolve the heavy structural members themselves into a greater number of small units, which in theory can be further broken down into even smaller

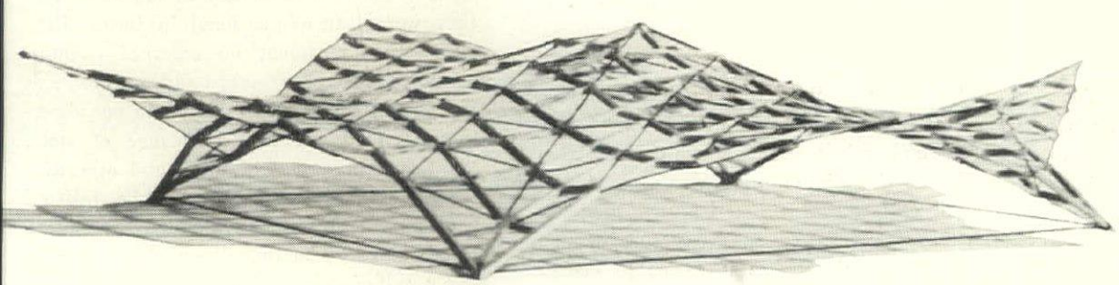


Space-frame demonstrations: *The School of Design at North Carolina State College, under the guidance of Acting Head Eduardo Catalano, developed the striking space-frame designs on these two pages. Right is a roof structure based on wrapped surfaces—composed of the precast concrete units shown above and erected with a minimum of formwork. First the edge beams are positioned with the aid of column supports and cable bracing, then precast units are hoisted into place, the joints grouted and in two days the shores are removed, leaving a rigid roof structure.*

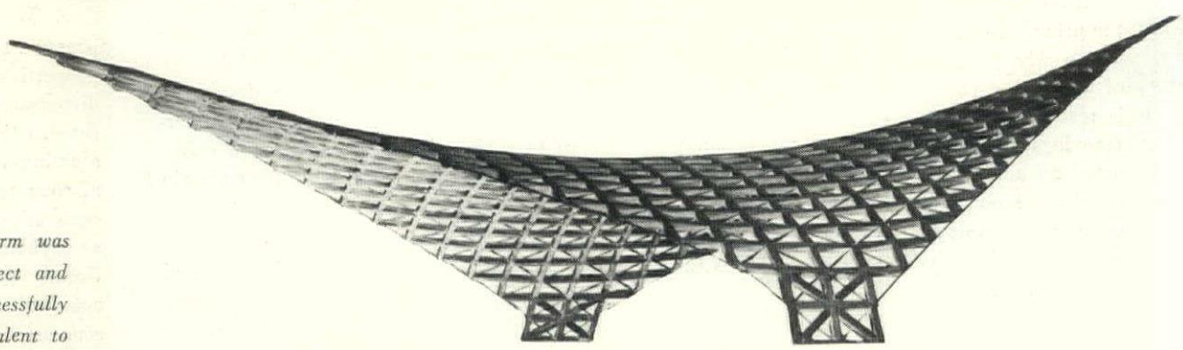


Stadium design *is a sector of a sphere. It is made of Y-shaped precast units and is held together by a two-way system of tension cables.*

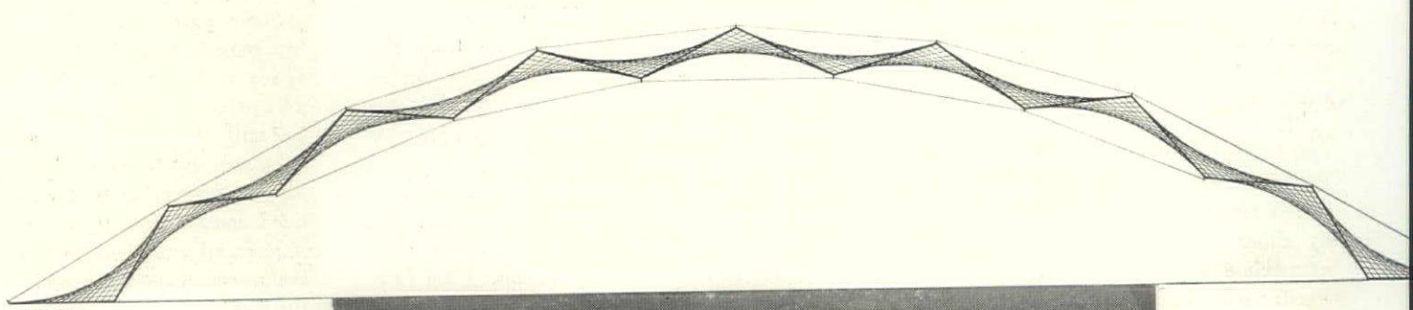




This roof structure *is designed from a system of hyperbolic-parabolic curves arranged to eliminate bending moments. It could be built in either metal, timber or precast concrete.*

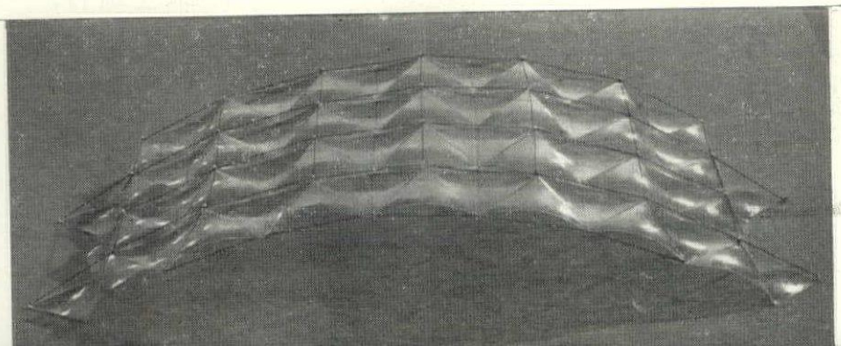


Saddle structure *in model form was tested under a variety of direct and eccentric roof loadings. It successfully withstood wind loadings equivalent to a 100-mph gale.*



ELEVATION

Arch *composed of a series of identical saddle-shaped structural forms is calculated for a span of 118'. Units are 18' x 12' and 3.15' deep.*



elements. Enormous possibilities lay ahead by introducing methods of prestressing either of individual members or of the entire structure. The impact of space-frame construction in architecture will be enormous."

E. F. MASUR

"Nor is this all. As every engineer knows, most beams and girders are proportioned to enable them to 'carry the bending moment.' Actually, of course, the function of the structure is not to carry bending moments, but loads and forces, the loads being the undesirable by-products of our conventional modes of construction.

"The fact that bending moments are undesirable has been recognized for a long time, but conclusive remedial steps are rarely taken. Perhaps the most determined attempts to reduce parasitic bending moments are represented by the arch and the suspension bridge. Other, less basic, efforts consist in the introduction of statical indeterminacy, which leaves the over-all picture unchanged but reduces local moment peaks. It is primarily the space frame which permits the full utilization of the strength of each element and provides a more rational division of labor among the elements."

FRED N. SEVERUD

"In most of our buildings we create space the hard way, utilizing relatively thin members in bending. One of the first space frames I had occasion to develop was an octagonal-shaped tower supporting the cupola in a Russian church. We used eight inclined members spanning between a tension ring at the bottom and a compression ring on top.

"Another useful type of space frame uses the principle of the camp stool—a 'stemming' action where space is provided by the use of catenaries (the canvas seat) whose pull is resisted by inclined compression members (the legs of the stool). Fluttering is eliminated by anchoring the catenaries by others running across the first. This stemming principle was employed by the late Mathew Nowicki in his pavilion at Raleigh, N.C." (AF, Oct. '52.)

EDUARDO CATALANO

"Following the research begun by Nowicki, our work at North Carolina has gone far beyond the Raleigh Pavilion in the study of both space structures and repetitive spatial structural systems. As shown by the models, these have led to interesting structures:

"1. A stadium designed with a spheric space-frame construction—the 4'-thick double shell, or bowl, is composed of modular, precast Y-members and the structure stabilized by either a steel tension ring around the grandstand or a doubly curved tensile skin. Prestressed reinforcing is concentrated around the four supports. Entry is via stairs leading through the supports, where the horizontal space between the shells increases to allow room for players' rooms, administration and storage rooms.

"2. The exploitation of hyperbolic-parabolic structural surfaces to cover the greatest area with the least material through the avoidance of bending moments. Such structures have actually been built by the Italian engineer, Giorgio Baroni, the most outstanding being 150' x 160' clear span roofs built in 1942 for an Alfa-Romeo factory using warped concrete surfaces only 1 3/16" thick." (AF, Jan. '53, p. 150.)

E. F. MASUR

"In defending conventional construction methods, most American builders confine themselves to one argument, which is as worn out as it is false: materials are cheap in this country (they argue) while labor is high, thus making the proposed changes uneconomical and therefore unnecessary. Even if true, this line of reasoning would be dangerous, for our industry can ill afford to sit on its haunches and permit European industry to develop construction methods. This would reduce our own procedures to noncompetitiveness in a world market where American economic conditions do not exist. This is best shown by the example of prestressed concrete, whose advantages are only now being recognized in this country after giving Europe a head start of several years. Most importantly, however, there is no reason to assume that space-frame construction methods should involve more labor than conventional methods; it is actually a demonstrable fact that considerable saving in labor, on top of the obvious reduction in material cost, can be achieved through the introduction of standardization, prefabrication, etc."

SUMMATION BY LEONARD MICHAELS

The story on these pages culminates a development which began with the advent of steel. The key which opens the door to the structures illustrated and to many others yet uncreated is *tensile resistance*. Appreciation of this simple fact not only leads to an understanding of present structural trends in relation to the history of building structures, but also is a prerequisite for future creative development of three-dimensional structures.

No single reason can explain why early steel and reinforced concrete construction followed the simple principles of post and lintel, and why this practice still predominates. However, the passive nature of this system certainly makes it easier to design and simpler to erect, with one unit following another as in masonry construction. In the past, however, builders were forced by the limitations of their materials to develop a more dynamic system of thrust and counterthrust to achieve larger spans, thereby creating forms which used gravity to maintain their stability.

Now, as in the heyday of masonry construction, we are realizing the advantages of structural patterns created with interdependent members, where the tightening of the last turnbuckle may act as the arch keystone did in the past. The temporary support, such as is required in poured concrete construction, can just as easily be extended to steel or even wood structures until the members have been connected to act in unison.

The arches and vaults of former times were space structures only in the sense that they were three-dimensional in form. They were still dependent on external counterthrust to retain their shape and position, and they could transfer forces only in one direction. With the tensile resistance of steel, the thrust of arched, vaulted and otherwise shaped structural systems can be resisted *within* the system itself, thereby distributing forces in two principal directions and creating a self-contained three-dimensional structure. With tension rods, tension rings, compression rings, cables, etc., and the geometric properties of members designed in three dimensions, a great field for imaginative construction lies open in wood, steel and aluminum as well as in shell concrete. With all our technical ability, can we not create economical structures which will be at least as dynamic and imaginative as those of Gothic times? Some have already been achieved and certainly justified themselves, economically, esthetically and functionally.

SUMMATION BY F. J. SAMUELY

I have been interested to note from this discussion that quite a considerable number of skin structures have been erected in the US, but I also see that, as in Europe, progress from standardized construction is to be found more in reinforced concrete than in steel.

I would not like it to be thought that skin structures and space frames are the right answer to all of these problems. I am fully aware that so far only certain structures can be advantageously designed in this way, notably roofs, staircases, galleries, theaters, and so on. It is always dangerous for any new idea to have too many supporters and to be applied in the wrong place.

Some part of the discussion referred to my remark that the difficulty of imagining space is to be blamed for a tendency to adhere to two-dimensional constructions. I am still of the opinion that this is so. The necessary mathematics have been available for a considerable time and, at least in latticed construction, there are no complicated differential equations involved at all. When the newest experience and theories of plasticity are taken into account the mathematics are anyhow often of dwindling importance. But I believe today it is essential that every engineer should be schooled to imagine things in space and not depend on plan and elevation for the solving of his problems.

Smart LOOKING

Smooth RUNNING

Long LASTING

Rō-Way OVERHEAD TYPE DOORS

for Commercial and Industrial Installations



You see it at a glance—the smart Ro-Way styling that blends so well with any type of commercial or industrial architecture.

You can tell in a minute that Ro-Way's smooth-running performance is built right in—with friction-reducing Taper-Tite track, Seal-A-Matic hinges, ball bearing Double-Thick Tread rollers, and Power-Metered springs.

And when you know that Ro-Way mortise and tenon joints are both glued and *steel* doweled . . . muntins, rails and stiles squared up with precision . . . sections rabbeted to assure weather-tight joints . . . millwork both drum and hand sanded . . . heavy gauge steel hardware both Parkerized and painted . . . then you *know* why Ro-Way overhead type doors are so long lasting.

Smart looking, smooth running, long lasting! That's why Ro-Way *is* America's most wanted overhead type garage door.

there's a RO-WAY for every Doorway!

SEE OUR CATALOG IN SWEET'S

ROWE MANUFACTURING CO., 912 Holton St., Galesburg, Ill.

Rō-Way OVERHEAD TYPE DOORS

Nationwide sales and installation service. See your classified telephone directory for nearest Ro-Way distributor.



Blucher: *I am looking for the day when statistics say the persons per car is ¾.*

Opperman: *After 25 yrs. of thinking and discussing, we are getting to the point where we are bound to get somewhere in the next couple of years.*

Photos: Roy Stevens



Howard: *Must we wait for a crisis before we can get leadership from the natural leader of the community?*

Sawyer: *You can't change a public habit, and the great American public habit is door-to-door transportation.*

Wehrly: *The whole question of transportation must be considered as a public utility and so treated.*



TRAFFIC FORUM *continued from page 119*

ing care of it. Congestion will take care of it. Natural forces will take care of it.

The illustration I gave was three-pointed. I said I got on ten miles from city hall, paid 20¢, and stood up. That is an important factor as to why people drive automobiles. Everybody else that got on about the same time I did, or afterward, stood up.

You can go to some cities and find from origin and destination surveys that half the people who come into the center of the city from a distance of one-half to two-thirds of a mile, drive their own automobiles. Why? Because they don't want to stand up and don't want to pay the 20¢ fare.

Prentice: It is a matter of simple logic that a parked car and a moving car cannot use the street space at the same time. Somebody is going to have to decide which of them has priority and under what terms.

Evans: One of the biggest obstacles to removing curb parking, one of the reasons we can't clear the streets, is the opposition of retail merchants themselves to it. They have an exaggerated opinion as to the importance of curb parking to their business. A recent study in Vancouver showed that only 5% of the people parking cars at the curbs were actually shoppers. Other city studies have shown similar results ranging from 5 to 50%. That is not understood by many merchants who fight to the last ditch to keep curb parking. A second thing that is not well known is the fact that your curb parker only spends about a fourth of what your off-street parker spends in the retail stores.

Prentice: This is exactly the point that I am trying to get at! How important is the curb parker? I am trying to get statistics on it.

Clark: I can give them to you for New York City. If the number of vehicles entering the area south of 61st St. in Manhattan on a typical business day were all to be parked in off-street facilities, they would require an area of about 2,600 acres. This is equivalent to the ground-floor area of all property in Manhattan south of 52nd St.

Prentice: How many cars can be parked on the streets at the same time?

Clark: If you take in the area south of 61st St. all the way downtown, it is probably more than 10,000. We have no recent figures, but in 1941 the area between 47th and 55th Sts., Park Ave. to 6th Ave., had curb parking space for only 411 cars.

Hammond: At one time, or all day?

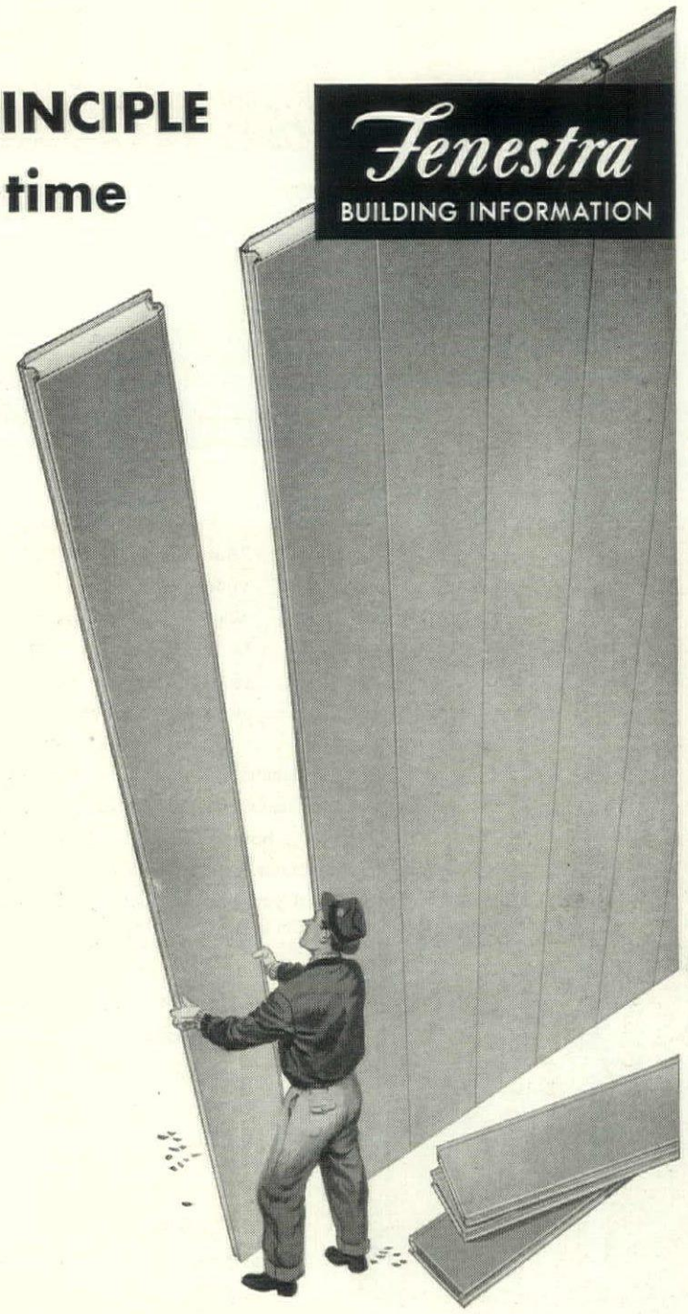
Clark: At one time. There are something like 380,000 motor vehicles, mostly private cars, that enter on a typical business day.

Miller: We can give you figures of a city of 106,000 serving a market of 360,000 popula-

continued on p. 164

Fenestra "AREA" PRINCIPLE saves you building time . . . and money!

Fenestra
BUILDING INFORMATION



Your building strides up area by area instead of creeping up inch by inch . . . a 16″ wide, 14′ long metal Fenestra "C" Panel, for example, forms 19 square feet of *inside and outside wall*, in one unit. Its 3″ thickness is packed with insulation. Better protection than a 16″ thick wall of masonry.

As the Fenestra* Panels quickly, tightly interlock and your walls enclose your building, a field coat of paint finishes the job. A prime coat was baked on the panels before they came to the site. Or they were *galvanized*—you have your choice.

No masons, no carpenters, no extra trades at all.

You're under cover and into production faster than you believed possible.

You've saved time, labor, materials and money.

You have walls so lightweight that you have even saved on structural steel.

You have walls that are clean and handsome and require practically no maintenance . . . walls that are firesafe.

You have walls you can even dismantle and reassemble when you want to expand.

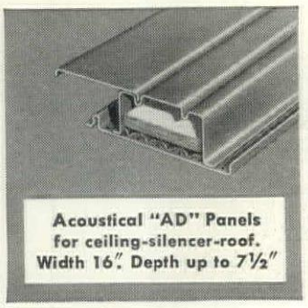
A lot of the handsome modern buildings you see as you travel around the country are testimony of the fact that Fenestra's "area" principle of building makes modern management sense.

For further information, write or have your architect write, the Detroit Steel Products Company, Department AF-2, 2296 East Grand Boulevard, Detroit 11, Michigan. *Trademark

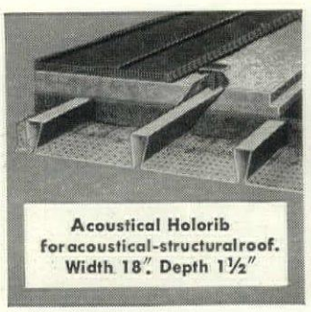
Fenestra **METAL BUILDING PANELS**



"C" Insulated Wall Panels. Width 16″. Depth is 3″ Steel or aluminum.



Acoustical "AD" Panels for ceiling-silencer-roof. Width 16″. Depth up to 7½″



Acoustical Holorib for acoustical-structural roof. Width 18″. Depth 1½″



Acoustical "D" Panels for roofs, floors, ceilings. Width 16″. Depth 1½″ to 7½″

Sure Fire Killer!

"Automatic" SPRAY Sprinkler

UL LISTED AND FM APPROVED



YOU should specify "Automatic" SPRAY Sprinklers for your new building now in the planning stage or an old one, soon to be renovated. For here is a completely new fire fighting device that provides far superior protection than can conventional approved sprinklers. They're recognized as **preferred** for installation in all types of occupancies . . . both concealed and exposed piping systems. Yet, "Automatic" SPRAY Sprinklers cost no more than old style heads.

Ask any fire insurance underwriter about "Automatic" SPRAY Sprinklers, the "sure fire killer." He knows the facts of fire and what's needed for maximum safety.

You can afford no less than the best. Get "Automatic" Sprinkler . . . . FIRST IN FIRE PROTECTION.

"AUTOMATIC" SPRINKLER CORPORATION OF AMERICA

Offices in principal cities of North and South America

New literature available on request



"Automatic" Sprinkler

CORPORATION OF AMERICA · YOUNGSTOWN, OHIO

TRAFFIC FORUM *continued*

tion. Allentown, Pa. has a primary hard cor which we call our commercial parking ar for business, or for merchants, or for lawyer of only 800′ from the main street. Within th area we have 1,400 curb meters—every cu spot that is not a bus stop. There is no parkir on the main street at all, but every point withi that primary zone is metered. There are 3(off-street spaces which are under municip authority. There are 200 spaces that are owne by two of the department stores. In additio there are 1,200 spaces in off-street lots whic are owned by our merchants' organizatio making a total of 3,100 spaces.

Hammond: Do you make money?

Miller: Yes, we made $26,000 this yea Theoretically, we turn over our merchant lots three times, our curb meters seven time our department store lots four times, giving u about 14,500 spaces per day. Six years ag when we set up our plans, we drew a 1,00(circle, and said we would work within tha We found that the three lots we own at th edge of the circle did not prove satisfactory fo commercial parking, or for store custome parking, so we drew our circle down to 800 Outside of that we have a municipal authorit that has meter parking for two bits all da on the theory we can't give a two-bit all-da service on a parking lot if we have a mar power cost.

Hyde: A recent survey of parking in Clev land shows that in the peak parking perio from 1:30 to 2:00 o'clock, the number c cars parked was 24,000, and the number c spaces was 29,000. And there is still a deman for more parking. The answer to that, o course, is that some of that parking isn within 100′ or 200′ of where people want to d business.

West: Are we trying to provide more down town parking to encourage people to par downtown? Or, should we try to deter down town parking on the theory that downtow parking adds to traffic congestion and thereb hurts the downtown business?

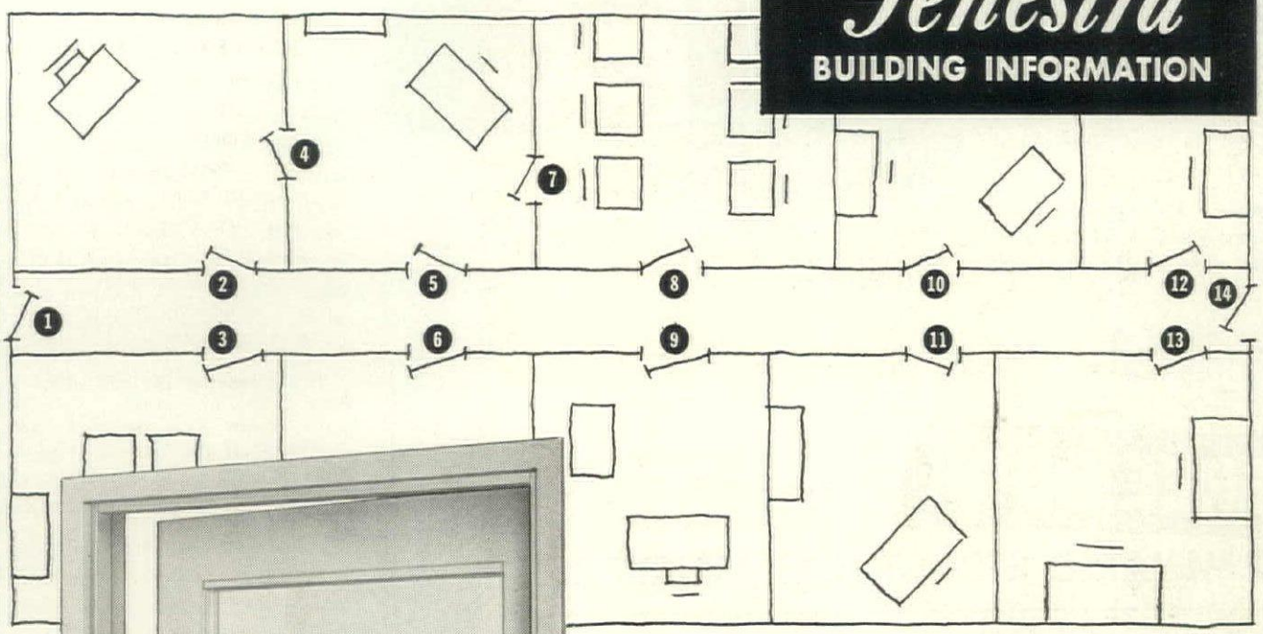
Welch: May I give some figures that migh shed some light on that? In the last *Eno Foun dation Traffic Quarterly* I have helped set cer tain criteria as to the relationship of parking spaces to gross square feet—a so-called park ing index, a ratio of the number of parking spaces per 1,000 gross sq. ft. of floor area o building.

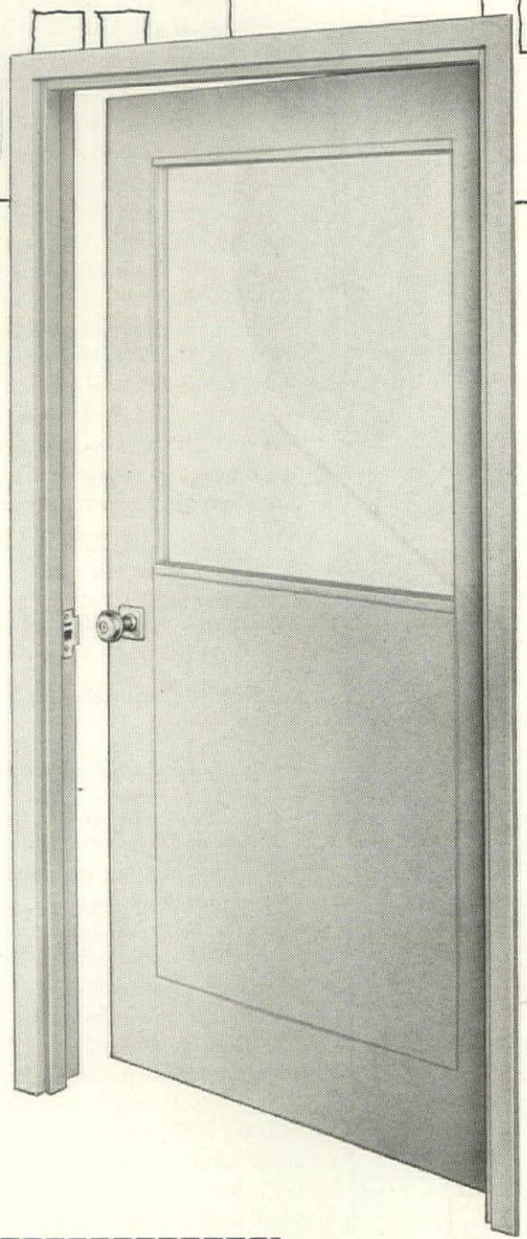
Now, it is very simple arithmetic to show that in any central business district, with a tremendous investment necessitated in struc tures, you can never, in a large city, reach a parking index of .50. In medium-sized cities, we would be tickled to death if we could hit a parking index of .75.

Prentice: Can some way be found to bring private enterprise financing into the garage

continued on p. 166

Fenestra
BUILDING INFORMATION





Imagine Saving $50 a Door

$700 saved on 14 doors!
Count the doors in *your* building and start multiplying. Compare the cost of Fenestra* Hollow Metal Door-Frame-Hardware Units with other hollow metal doors and you'll find you can save from $50.00 to $100.00 per door with Fenestra.

Fenestra Hollow Metal Flush Doors cost less to buy because they are mass produced on special jigs that cut out a lot of expensive time and labor. This system was born of Fenestra's years of metal fabricating experience.

You save on installation cost because these handsome doors come complete with strong, prefitted, prime-painted, steel frames and shining hardware. Again time and labor are saved. There's no cutting or fitting—the door is *in* and *in use* a lot more quickly.

You save on maintenance costs because Fenestra Hollow Metal Flush Doors can't warp, swell, stick or splinter. They always open easily . . . smoothly. And they close quietly, because inside the panels is double insulation.

For strong, solid quality at unusually low cost, check on Fenestra Doors—there's a door for every purpose in the Fenestra line: Flush Entrance Doors, Flush or Regular Interior Doors with glass or metal panels, Doors with the Underwriters' B Label. For pictures and details, write the Detroit Steel Products Co., Dept. AF-2, 2296 East Grand Blvd., Detroit 11, Michigan. *®

Fenestra

HOLLOW METAL DOOR–FRAME–HARDWARE UNITS

. . . save building time, labor, materials and money



Clark: *The most efficient traffic system will be of only temporary relief unless it is related to land development along the streets.*

Adams: *We can't solve downtown problems without solving them for the whole city.*

Photos: Roy Stevens



Barnes: *People didn't know if we helped traffic but we sure scared the natives.*



Welch: *When you are creating a supply that is 25% of the demand, you can make a profit on parking facilities.*

picture? It seems to me we are all reasonably agreed that up to now, private enterprise capital has been very slow in coming in.

Miller: There is no great mystery why private enterprise capital has not been drawn into the parking business on a large scale. It is just arithmetic. Parking has not proved to be a very attractive investment. High land costs, the lack of the power of eminent domain to assure the acquisition of land areas at the right places, high manpower and handling costs, rate limitations due to the competition of free parking, low-cost parking at the curb —all combine to promise only a modest return, if any, on capital.

Adams: If the parking business in fringe areas is not profitable, private people will not touch it, and the government will have to do it.

Stanton: Private enterprise can do fringe-area parking under a system now in operation in Norfolk, Va. There we have fringe-area lots. You park yourself, and the stalls are sold on a monthly basis only. You pay three months in advance, so there is no credit problem, no collection problem, no expenses, no attendant.

A name is put on the stall and it is respected by the public. The cars that are infrequently parked there without authority are hauled off to a garage, and the owners have to pay their way out of that garage. That happens rarely: the system works successfully. It is $4 a month, just three blocks from the heart of downtown, and it is run by private enterprise.

What are the roles of private enterpr

and public agencies in providing

parking lots and garages?

McGavin: During the past seven years there has been created in the public mind the idea that tremendous parking progress is being made through municipal undertaking. In 1951 and 1952 I went through 44 cities; I have walked from one end of each city to the other to see what they have actually accomplished. Not plans, projects, beautiful sketches, press releases; I wanted to see existing places.

The cities that have produced the least have been the cities that have been talking the most about municipal parking. On the other hand, the private enterprise policy that we have followed in Washington, D. C. has produced, over seven years, a net gain of 20,500 spaces.

Kelley: Mr. McGavin, if you carry this principle of free enterprise, which I certainly agree with, to its logical conclusion, wouldn't that leave you with the question of whether, if parking people in a city can't handle its parking problem on a satisfactory basis, there

continued on p. 168

FREE BOOK ON LAMINATED STRUCTURAL MEMBERS

INDEX

	PAGES
TANGENT ARCHES — Uses: Churches, chapels, schools, gymnasiums, auditoriums, theaters	4, 5, 6, 7, 8
PURLINS	9
BEAMS — Uses: Schools, gymnasiums, stores, theaters, industrial buildings	10, 11
RADIAL ARCHES — Uses: Gymnasiums, auditoriums, field houses, hangars, skating rinks, bowling alleys, commercial buildings	12, 13
BOWSTRING TRUSSES-TIED ARCHES — Uses: Warehouses, factories, garages, stores, bowling alleys, skating rinks, hangars	14, 15
UTILITY ARCHES — Uses: Gymnasiums, theaters, community buildings, warehouses, hangars	16
FABRICATED STRUCTURES — Timber Trusses and Girders	17
FARM BUILDINGS	18
SPECIFICATIONS	19
SERVICES	20



MAIL COUPON . . .
for Rilco's Sweets Catalog

RILCO
LAMINATED PRODUCTS, INC.

RILCO LAMINATED PRODUCTS, INC.
2524 First National Bank Building
St. Paul 1, Minnesota

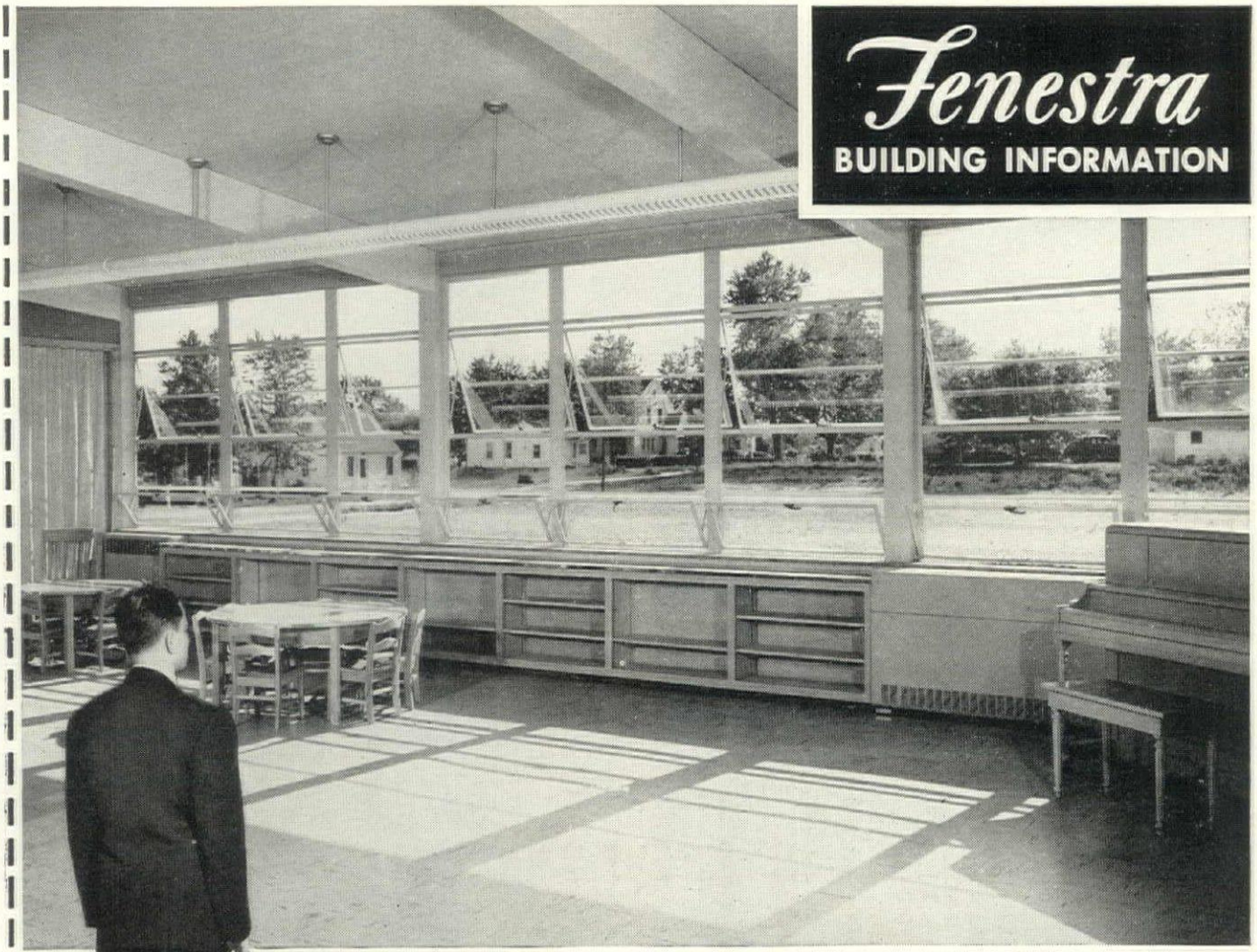
Please send Rilco's Sweets Catalog

*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

Fenestra
BUILDING INFORMATION



LIGHT, BRIGHT, ALERT CLASSROOM with Fenestra Steel Windows at Maple Hill Elementary School, Lansing, Mich. Notice how light fills the room. Architect: Laitals & Nuechterlein, Lansing. Contractor: Granger Bros., Lansing.

How can you get more light in a room by shutting a lot of it out?

Most of the school year, you need all the daylight you can bring in.

The only way you can avoid shutting a lot of it out is with clear glass.

And Fenestra* Intermediate Steel Windows are designed to give you *more clear glass area* . . . their frames are especially designed to be strong and rigid without being bulky.

They open up your whole room for an atmosphere of freedom and alertness.

You get controlled fresh air through the protecting vents in any kind of weather. No drafts. And rain can't get in.

Washing and screening are done from inside, so maintenance is simple and economical.

AVAILABLE SUPER GALVANIZED

Fenestra Steel Windows are available Super Hot-Dip Galvanized for complete protection from rust . . . *no painting necessary*. This Super Galvanizing is done in a special Fenestra plant . . . it is a Fenestra exclusive.

When you're buying daylight, get your money's worth. Get Fenestra Intermediate Steel Windows —made by America's largest steel window manufacturer. And write for your free copy of Better Classroom Daylighting by Lighting Expert, R. L. Biesele, Jr., and his staff. Detroit Steel Products Company, Dept. AF-2, 2296 East Grand Blvd., Detroit 11, Michigan. *®

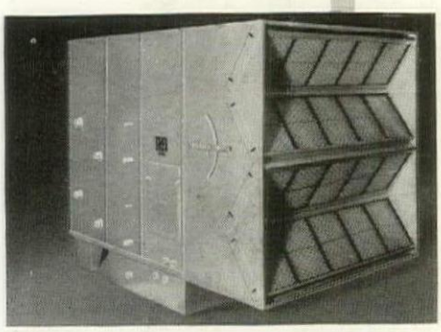
For better school environment

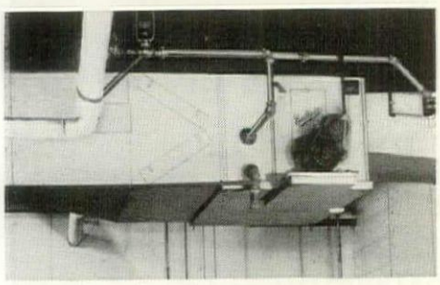
Fenestra **STEEL WINDOWS**

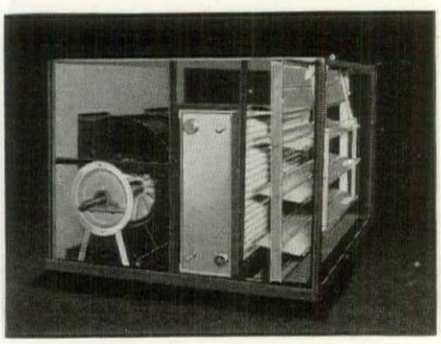
easy to install
easy to live with



"Buffalo" "PC" CONDITIONING CABINETS







When you air condition, you want three things—as inexpensive a job as will do, equipment that installs economically—and most important—equipment that gives satisfactio over a long period.

Cost-wise, the central cabinet is the least expensive part of your system; considering compresser, duct-work and building modifications.

Satisfaction-wise, its the most important!

If the fans are over rated, or inefficient, you'll suffer. If the coils are inefficient or untrustworthy, you'll have poor air conditioning.

Why not be sure that on this lowest-cost part of your system, you get the best?

"Buffalo" "PC" Air Conditioning Cabinets, to heat, cool, humidify or dehumidify, or any combination of these functions, have been in use for more than twenty years. They are sectionalized, to pass thru standard building openings, and assemble easily on location. They have husky, quiet, mixed flow fans mounted on large, vibrationless hollow shafts. They have Aerofin coils, by far the best obtainable. They have sturdy, outside-the-housing bearings, for convenient lubrication even after cabinet insulation. In short, they are built according to the "Q" Factor* which makes them your best buy!

"Buffalo" Engineering Sales Representatives in principal cities are anxious to serve you. Let them give you full details—no obligation.

*—The "Q" Factor—The built-in Quality which provides trouble-free satisfaction and long life.

DIAMOND JUBILEE 75TH ANNIVERSARY

"Buffalo" FIRST FOR FANS

BUFFALO FORGE COMPANY

142 MORTIMER ST. BUFFALO, NEW YORK

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

VENTILATING | PRESSURE BLOWING | AIR CLEANING | COOLING | AIR TEMPERING | HEATING | INDUCED DRAFT | FORCED DRAFT | EXHAUSTING

would be a natural tendency for the traffic to go to the suburbs? Past experience indicates that the flow of automotive traffic tends to seek the least congested areas, wherever possible.

Hamilton: Mr. McGavin has painted the city folk as being blackguards, trying to drive the parking-lot people out of business. Our philosophy is: encourage private enterprise to do it, let them do it. If they show the initiative, the courage, and the finances, and the faith in their industry, which they have indicated in the last year or so, sure. But, if our citizens complain, and if private enterprise fails to alleviate the situation, then by virtue of the pressure, political pressure if you will, on the City Council, it becomes incumbent on the cities to seek a solution to the parking problem. Because, after all, it is a municipal problem closely related to the public safety, welfare and commerce.

Marsh: If you will divide this up into four parts—planning, site acquisition, construction, and operation—and then think of who ought to do what about them, I think you will get along a lot faster.

As far as planning is concerned, the interest of the people ought to be that you have a community-wide program, and whereas in Oakland and in Allentown, and a few other places, the merchants seem to have taken a very progressive stand, I have personally visited a large city in the Midwest where a site was shown to me for a 1,000-car garage, and very proudly boasted as the answer to the problem. It was the answer to that merchant's problem, off on one side. It was not a community answer. So, if we want a community answer, we certainly ought to call on our public servants to produce the community plan, and I do not see how anybody can challenge that.

Then, when it comes to the site acquisition, we know that the community must come into the picture very frequently because of its power of eminent domain, or condemnation.

When it comes to construction and operation, our main concern is not whether these are by private enterprise or public agency—our main interest is in seeing that the job gets done. In general, we would like operation privately handled.

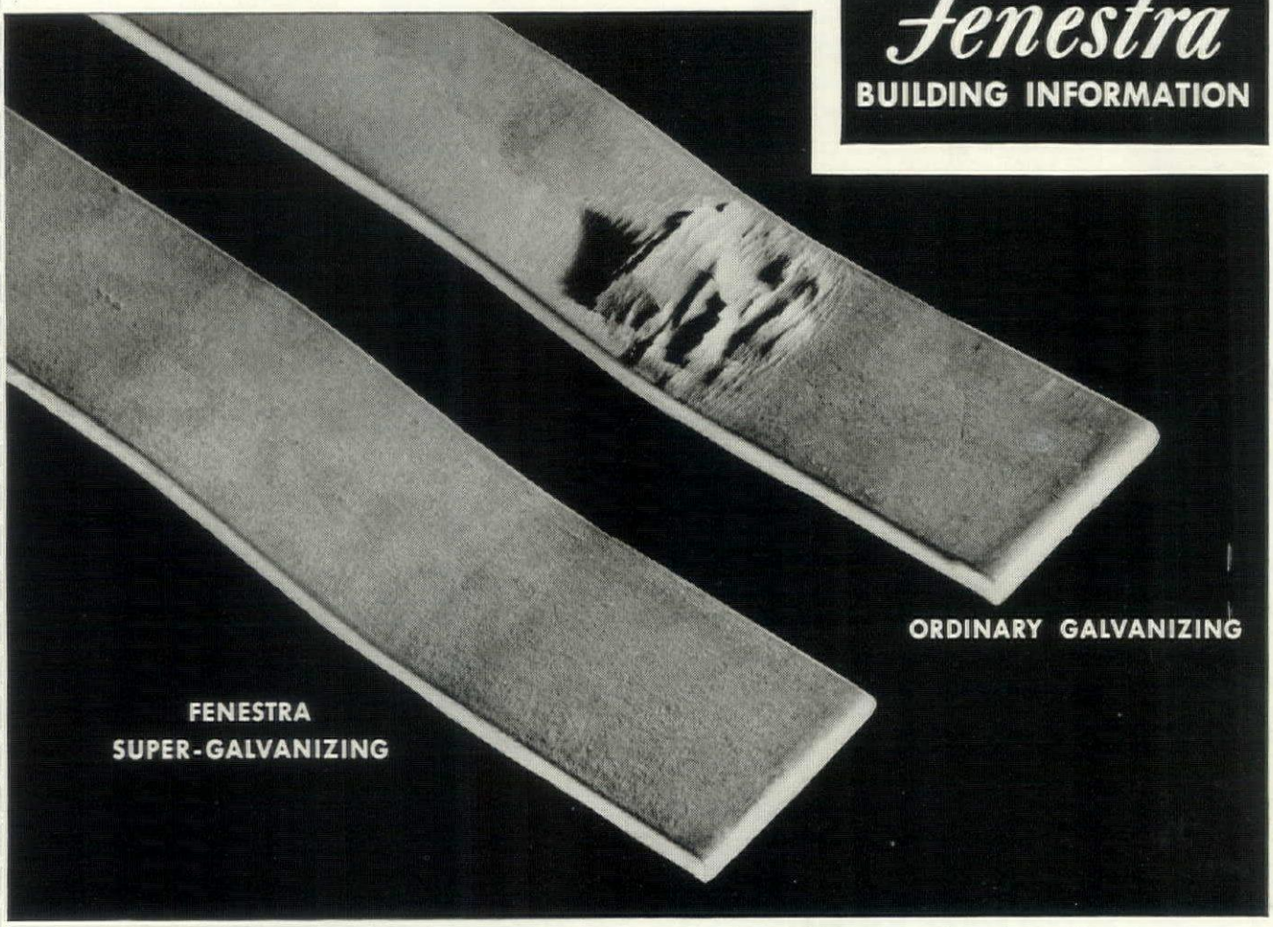
Prentice: Is it generally true that you people who operate commercial off-street parking facilities believe that it can be a profitable business?

Wheaton: Obviously, if the City of Chicago needs 25,000 parking spaces, the first 5,000 spaces can be provided at a very handsome profit. But the parking problem will not be solved, and the merchants and the community may suffer.

McGavin: The trouble is there are so many threats from City Hall that "we are going to

continued on p. 170

Fenestra
BUILDING INFORMATION



Test shows why Fenestra Super Galvanized Steel Windows cost less to maintain than any other

First, no window is more rigid or rugged than a steel window. Fenestra* windows are steel windows . . . built by men whose job it is to keep Fenestra the largest steel window manufacturer in America.

Second, no window requires less maintenance than a Fenestra Super Hot-Dip Galvanized Steel Window. The test results illustrated above show you the tremendous difference between Fenestra galvanizing and ordinary galvanizing.

Two galvanized steel sections were bent, then straightened. On the one that was galvanized by the common method, the strain caused the coat of galvanizing to crack clear to the bare steel.

The Fenestra section was unmarred.

This simply illustrates the superior bond between the steel and the coat of galvanizing on a Fenestra Steel Window. It shows you why Fenestra Super Hot-Dip Galvanized Steel Windows, under normal conditions, will *never need painting.*

The reason for their superiority? They are galvanized in the only plant in America with equipment especially designed for the exacting job of hot-dip galvanizing steel windows. No other plant has the special deep tanks, the automatic controls.

For full information, write Detroit Steel Products Company, Dept. AF-2, 2296 East Grand Boulevard, Detroit 11, Michigan. *®

Fenestra

SUPER HOT-DIP GALVANIZED STEEL WINDOWS

from the only plant in America especially designed to Hot-Dip Galvanize steel windows

Photos: Roy Stevens



Forster: *The whole issue on curb parking is, shall we or shall we not permit it?*



McGavin: *There have been so many threats from city hall that it has driven private enterprise underground.*



W. Richards: *The transportation problem is a combination of mass transportation with the free-wheeling automobile, off-street parking and traffic control.*

do this, and with subsidized money," that it has driven private enterprise underground.

Barnes: It certainly has in Denver.

McGavin: Private enterprise is not going to come out under those conditions.

G. Richards: I don't think anyone in government wants the private parking industry to lose money. We feel there is a place for the private parking corporations to furnish parking facilities in cities. We in Detroit are working, and will continue to work, with companies interested in providing off-street parking. We have done everything to encourage private ownership of parking decks. We have acquired property in business areas and leased the property to private enterprise for operation, and are now working out a plan with private operators to build additional off-street parking facilities with assistance from the city.

Welch: When you have a municipal operation, you cannot use it for retail sales. We are now promoting legislation whereby government can help private enterprise so that we can use only as much of the first floor area as we need for parking entrance, and use the rest of it for retail stores to maintain pedestrian continuity and purchasing power which is the important thing in the central district.

Sawyer: Private enterprise has done it up to date. With proper encouragement, such as we are getting in Boston, private enterprise will do the entire job from here on out.

Kelley: If private enterprise in the city cannot handle their very troublesome parking job, this fact may contribute to the growing tendency of commercial activity to move outward from the center of the city. If it is not economically feasible for private capital to provide adequate parking facilities in crowded downtown areas, is it entirely fair to ask the urban taxpayer to assume the financial burden of providing such facilities? That is, unless he has a reasonable opportunity to express his reaction thereto through duly held municipal elections, or something like that.

W. Richards: The reason I feel that an authority, a centralized control mechanism, is extremely important is based on four points:

1. The necessity of locating facilities properly.

2. Continuance of that facility in that place, regardless of whether it is making a profit.

3. The over-all integration of traffic planning.

4. Lastly, the control of rate structure.

McGavin: On the public side, the city should contribute data and surveys which would enable us to determine with reasonable accuracy the parking requirements. In developing a plan of action, private enterprise should be consulted and brought into the councils to draw on its know-how.

continued on p. 172



when you need to be SURE

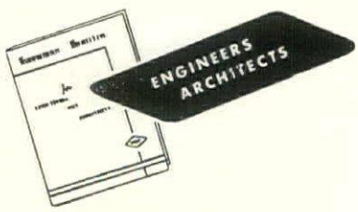
specify Will Burt stokers

for a completely satisfactory coal heat installation

When you need to be sure of satisfaction, it pays to specify a rugged Will-Burt stoker. You can rely on Will-Burt for dependable service, long life, minimum maintenance and economical heat. Wherever bituminous coal is burned, Will-Burt reliability will help build the complete customer satisfaction that brings good words and more jobs for you.

More than twenty years of experience in stoker design and the finest of precision workmanship go into every Will-Burt stoker. Exclusive Will-Burt features such as the automatic air control, patented shear pin, and disconnect switch save fuel and improve operation in general. Will-Burt stokers are available in a wide range of sizes—there are bin-feed and hopper models for most domestic and commercial needs.

When you have a job that calls for coal heat, you can insure satisfaction by specifying Will-Burt. Write today for complete details.



Write on your letterhead for the Will-Burt stoker data book, with engineering facts, dimension and installation drawings, suggested specification sheets, etc. Valuable!

WILL-BURT

THE WILL-BURT COMPANY

Box 903 ORRVILLE, OHIO

STOKERS • RESIDENTIAL BOILERS • OIL AND GAS CONVERSION BURNERS

Meet changing office space requirements with

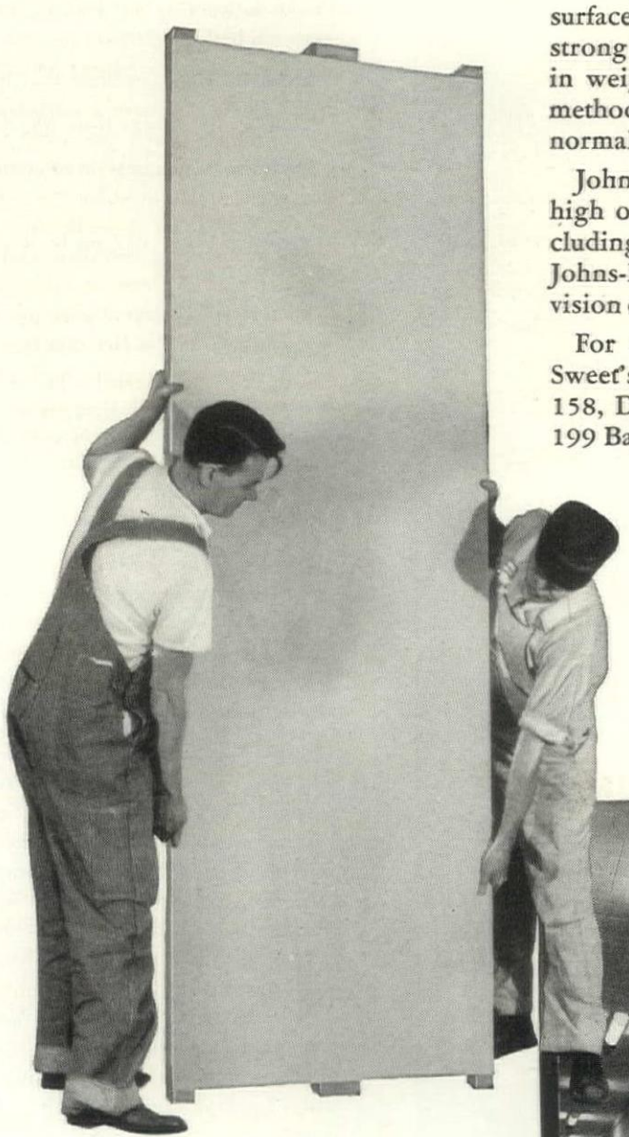
Johns-Manville Movable Walls

YOU CAN REARRANGE existing offices or partition new space quickly and economically with Johns-Manville Asbestos Movable Walls.

These flush-type, asbestos panels have a clean, smooth surface that's hard to mar, easy to maintain . . . and extra strong to withstand shock and abuse. Also, they are light in weight, easy to install and relocate. The "dry wall" method of erection assures little or no interruption to normal business routine.

Johns-Manville Movable Walls may be used as ceiling-high or free-standing partitions. The complete wall, including doors, glazing and hardware, is installed by Johns-Manville's own construction men under the supervision of trained J-M engineers—*responsibility is undivided.*

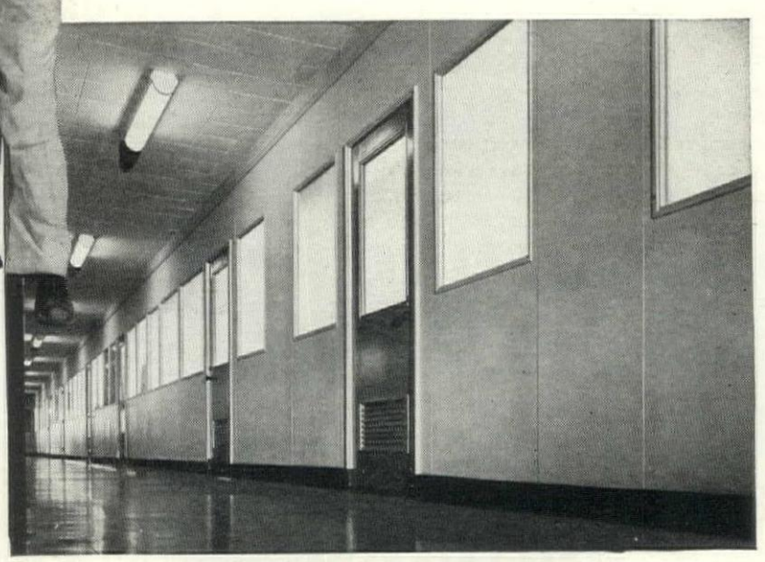
For details about J-M Movable Walls, consult your Sweet's Architectural File, or write Johns-Manville, Box 158, Dept. MB, New York 16, N.Y. In Canada, write 199 Bay Street, Toronto 1, Ontario.



JOHNS-MANVILLE JM PRODUCTS

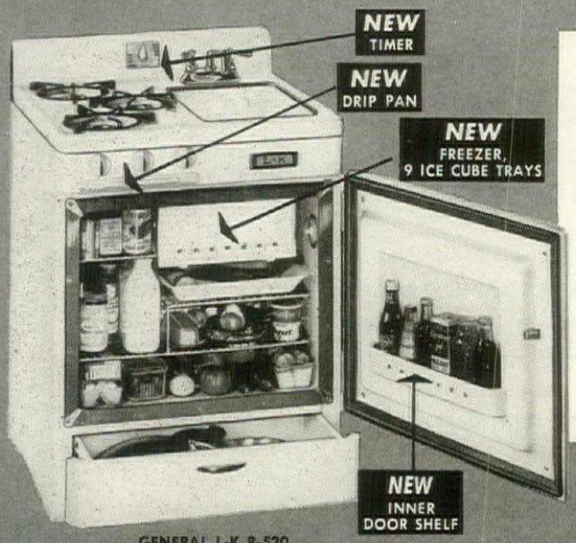
Johns-Manville

Asbestos Movable Walls



INSTALLED NATIONALLY BY JOHNS-MANVILLE

Save Dollars...Save Space
with the NEW GENERAL Kitchens



GENERAL L-K R-520

A COMPLETE KITCHEN: REFRIGERATOR, STOVE AND SINK

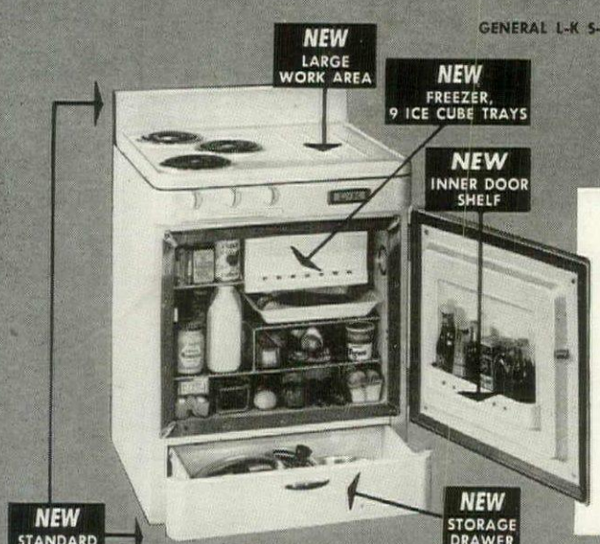
Has horizontal freezer, 9 ice-cube tray capacity, inner door shelf. In 27½" combines refrigerator, sink, storage drawer and 3 gas burners adjustable to natural, manufactured or bottled gas. Also available with electric burners for 220 v. or 110 v.

COMPLETE KITCHEN WITH OVEN IN 48"

by combining sink-refrigerator unit with any 20" apartment range. 4 cu. ft. capacity, inner door shelf, horizontal freezer, storage drawer, and topped by 1-piece porcelain sink, drainboard and back-splash.



GENERAL L-K S-550



GENERAL ES-1004

COOK ON YOUR REFRIGERATOR

General Chef is now standard 36" height. Requires only 5 sq. ft. of space. As shown, 3 electric burners (220 v.). Also available with 2 electric burners (2ES-1004) for 110 v. plug-in use; or 3 gas burners (RS-1004).

These units advertised in **LIFE**

DISTRIBUTORS - CONTRACTORS - ARCHITECTS - PROPRIETORS - WRITE:

GENERAL air conditioning corp.
(NATIONWIDE SALES AND SERVICE)

4528-B E. Dunham Street, Los Angeles 23, Calif. • 11 W. 42nd Street, Dept. 4, Suite 543, New York, N. Y. • 323 W. Polk Street, Dept. 14, Chicago, Ill.

TRAFFIC FORUM *continued*

Clark: I think I heard Mr. Ecker say tha some of these parking lots, or garages, wer producing traffic problems on the stree through the entrance and exit of vehicle That would seem to me to imply that unles there are some controls over where you locat parking facilities, you might solve the parkin problem but it also might create a problem i the traffic flow. Did I understand you correc ly?

Ecker: That's correct. I think there shoul be some control in locating these things s they will not conflict with the street use.

Prentice: Do you believe that the parkin garages in volume can be provided by privat enterprise without any help from governmer in the form of a tax deal, or acquisition o land, or anything else?

McGavin: I am confident that it can.

Prentice: If it can, then why isn't it?

McGavin: It has only been profitable in th last six years.

Prentice: What has made it profitable i the last six years?

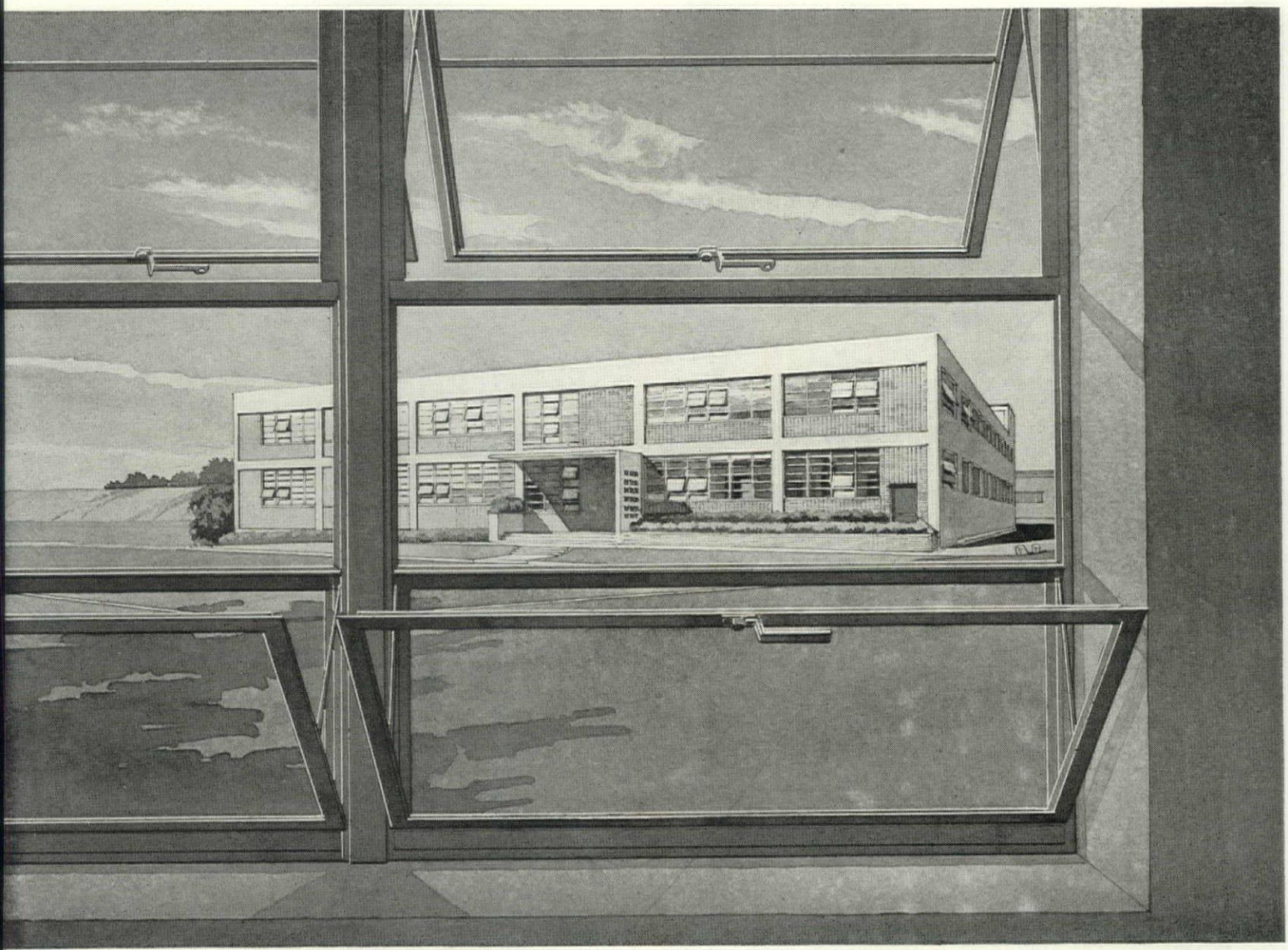
McGavin: Prices have gone up. People wer not educated to the fact that they should pa for parking a few years back. The parkin meter accomplished that one thing. It go people used to the idea of paying. Now, the are getting educated to the idea of going o street though there is a disparity between cur parking rates and off-street parking rates.

Pomeroy: The various subjects we have dis cussed should be fitted into a concept of th complete functional pattern of the city an of the entire region. Our approach to th whole subject should go beyond a comp tometer and a slipstick.

Clark: I would like to make this point mor specific. The traffic problem cannot be solve solely by what is done in the way of engi neering or enforcement of traffic regulation in the streets. The most efficient traffic sys tem, the most advantageous use of mass transportation will be of only temporary re lief unless land development along the street is related to the traffic plan.

The type and intensity of land develop ment along the streets is a major determinant of the amount and type of traffic the streets must handle. Control of this development comes under the heading of zoning. At the present time most zoning ordinances are be ing restudied and revised, but very few recog nize the relationship of land use to the traffic capacity of the streets that serve the land. A zoning ordinance and street traffic plan must be related so that whatever plan is worked out will continue to work reasonably well, and the city will not just wind up with congestion on a greater scale.

continued on p. 174



McKesson & Robbins, Inc., Queens, New York. Architects: Chapman, Evans & Delehanty, New York City. Builder: W. J. Barney Corp., New York, N. Y.

Wish you could take a trip through the plant . . . then you'd see why Lupton Architectural Projected Windows rate high with Architects throughout America.

From the heavy deep section steel bars, to the final thorough inspection, a Lupton Architectural Projected Window represents quality at mass production prices.

Ventilator corners are riveted, then welded for additional strength and rigidity. Excess weld metal is trimmed off and the exposed surface is finished flush. Carefully balanced ventilators permit finger-tip control, assure snug fit. All operating hardware is solid bronze, in a smooth mat finish. Completed windows are Bonderized for better paint adhesion, and prime painted in one continuous operation.

When you specify Lupton Architectural Projected Windows you give your customers abundant daylighting, easily controlled natural ventilation, sturdy strength and modern styling at moderate initial cost. Over-all costs are lowered through efficient long service and minimum maintenance expense.

The complete line of Lupton Steel or Aluminum Windows is available from coast to coast. Get the full story from the local Lupton Representative, or write direct.

MICHAEL FLYNN MANUFACTURING COMPANY
700 East Godfrey Avenue, Philadelphia 24, Penna.

Members of the Metal Window Institute and Aluminum Window Manufacturers' Association

LUPTON
METAL WINDOWS

Photos: Roy Stevens



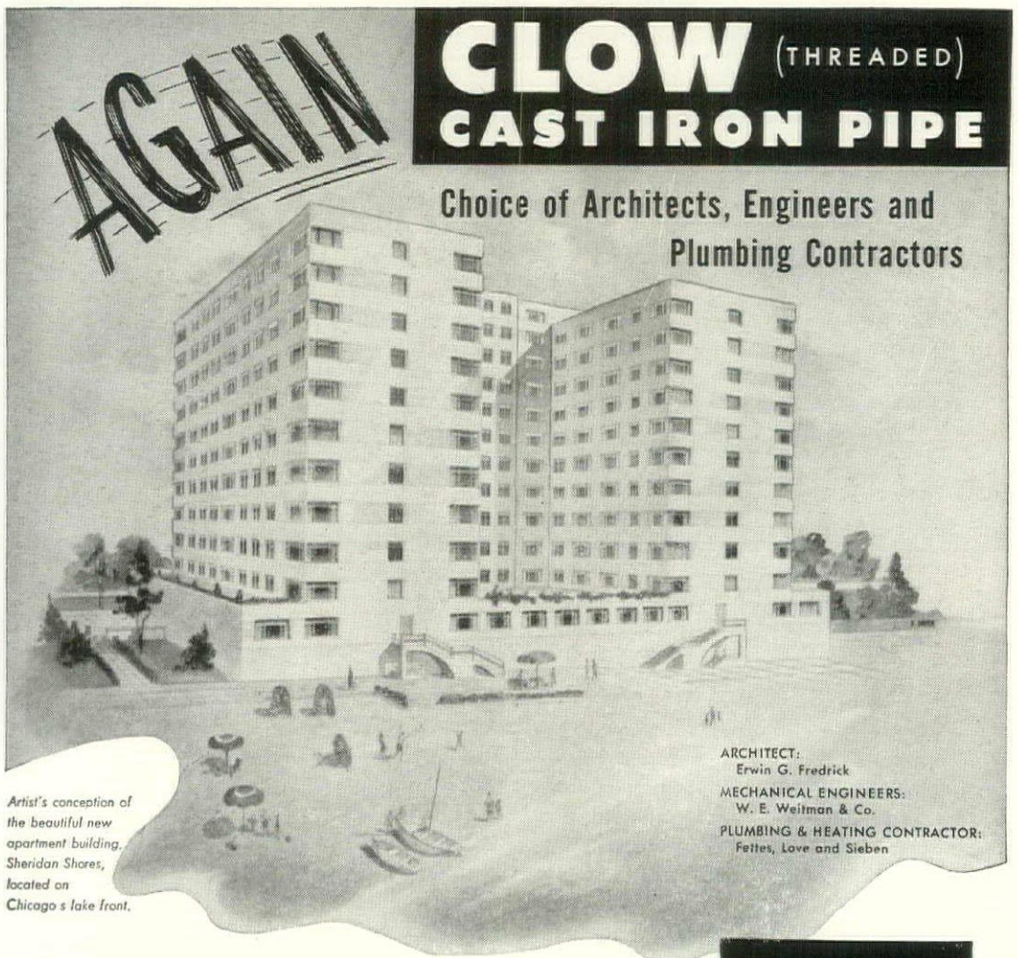
Prentice: *The slowness of so-called rapid transit is one reason why people come downtown by car.*



Stanton: *Parking can be made profitable by efficient management, proper policies and proper planning.*



Hamilton: *Our philosophy is: if private enterprise can do it, let them do it.*



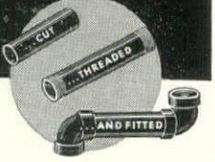
Artist's conception of the beautiful new apartment building, Sheridan Shores, located on Chicago s lake front.

Clow (threaded) Cast Iron Pipe was used in the construction of this modern apartment building—as it has been used in similar installations throughout the country. The preference is for Clow Cast Iron Pipe because of its corrosion-resistant properties and the fact that it offers a useful service life of more than a century.

The trend among leading architects and plumbers is to Clow (threaded) Cast Iron Pipe—for all 3 to 10 inch downspout, waste and vent piping. Everyone agrees its 18-foot lengths are economical to install.

Clow (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8, and 10" sizes in 18' random lengths. Also available with integral calking hub on one end (other end plain) in 18' random lengths in 4, 6, and 8" sizes.

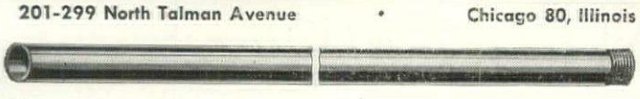
CLOW CAST IRON PIPE CAN BE



on the job, with ordinary tools of the piping trade.

JAMES B. CLOW & SONS

201-299 North Talman Avenue • Chicago 80, Illinois



WHOLESALERS OF PLUMBING AND HEATING SUPPLIES

Publishers of the Clow Bulletin

TRAFFIC FORUM *continued*

If rapid transit is not rapid enough, how can it be speeded?

Prentice: It is impractical to provide enough parking facilities and enough streets to get everybody downtown by private vehicle.

G. Richards: A study made in Detroit shows almost 75% of the people drive to work in their personal cars and only 25% use public transportation. The percentage coming to the downtown area, however, is about 50-50.

Prentice: In Philadelphia, what is your percentage of the people who come downtown by mass transportation?

Mitchell: A little over 80%.

Evans: Here are figures on what percentage enter business districts by public transit. For 19 cities under 100,000 population, the average value was 17%. Between 100,000 and 500,000, it ran 40%. Over 500,000, it ran 63%. These figures are from the *Traffic Engineering Handbook* and are based on the results of city traffic surveys.

Swift: A cordon count in Memphis shows that 60% of the people came into the business area by mass transportation, using only 6% of the vehicles.

Clark: In Manhattan, the most recent figures show 80% of the 3,750,000 people come into the area south of 61st St. on an average business day by mass transportation. Rapid transit brings in 64%; busses and trolleys, 8%; railroads, 7%; trucks, 3%; and pedestrians (by ferry), 1% . That leaves 17% coming in by automobiles.

Swift: A lot of people do not realize how many people mass transportation carries. When given in percentages, it sounds small, but we carried 16,125,000,000 passengers in the cities' operations during the course of last year. That is nearly 45,000,000 people a day. To transport that many people would require, using the 1.7 figure, 13,235,300 more automobiles on the streets, if we were not in existence.

The person who makes the greatest contribution to the relief of traffic congestion is not the traffic engineer, is not the city planner, is not the designer of freeways, but *is* the bus rider, who sits upon one bus seat, and uses from 4 to 10 sq. ft. of street space rather than sitting in an automobile, which requires 70 sq. ft. of street space.

Contrary to the general thought, we are not, as an industry, making a lot of profit. We have gone along, most of us, by the skin of our teeth. We are not a monopoly. I think our industry has to be thought of in the same light as other businesses—the retail store, the steel

continued on p. 176



New Sears Retail Store at Clinton, Iowa

buildings go up like MAGIC

when ALLIED is on the job



Speed is usually a very important consideration in the construction of stores, super markets, and shopping centers.

Three large fabricating shops operating as the Allied unit contribute to speed in getting the steel on location for such buildings. And even when the tonnage is not large, it is comforting to architects and engineers to know that such exceptional facilities are working for them.

On location, skilled erecting crews take over. The same short-cut methods used in erecting large industrial buildings and HUGE bridges count when schedules are tight.

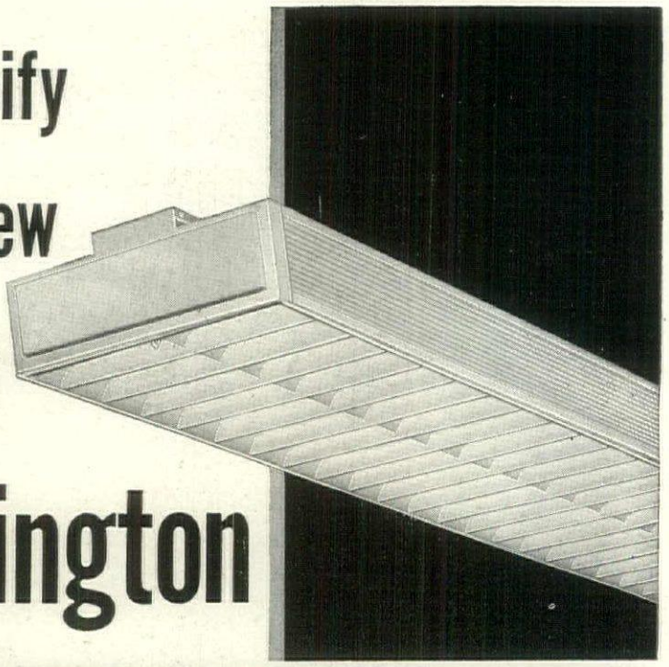
If you have projects of any size under way, where fabricated structural steel is specified, you will find it advantageous to know more about these facilities.

Consult us, or send your plans and specifications to be estimated.

- Clinton Bridge Corporation
- Gage Structural Steel Corporation
- Midland Structural Steel Corporation

Fabricators and erectors of structural steel for highway and railroad bridges; industrial, office, school, and government buildings; airport structures; harbor facilities.

specify
the new
miller
Burlington



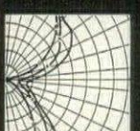
for correct
store lighting

CORRECT LIGHTING is an important factor in the making of sales—it puts customers at their ease—enables them to see merchandise at its best—speeds IMPULSE buying.

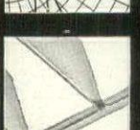
The new Miller BURLINGTON—a distinct advance in store lighting—provides CORRECT lighting of high efficiency without glare. It provides it at L. O. C. (low overall cost)—through engineering features that make for easier, quicker installation, and materially reduce cost of maintenance.

Write for Burlington Folder

Miller has a complete line of Fluorescent, Mercury and Incandescent luminaires, covering a wide range of industrial and commercial lighting requirements. NATION-WIDE SERVICE is available through Miller field engineers and distributors.



High lighting efficiency—no glare



Extremely strong, rigid one-piece steel louver assembly



Engineered for easy lamping and servicing



Modern design—architecturally styled for interior harmony

THE miller COMPANY
SINCE 1844
meriden, conn.

business, the milkman, and the corner drug store. We are manufacturers or retailers the same as the rest of the people, but we manufacture the most perishable product made. That is a bus ride. It has to be used while it is being made. None of you ever heard of a slightly used, or second-hand bus ride for sale, that's a cinch.

Now, on my own property, a typical example: 19.93% of the basic fare goes for special taxes not levied on other industries and in addition to normal taxes. The basic fare is 8.4¢; these special discriminatory taxes account for 1.6¢ of our fare, or 19.93%. When you buy jewelry, you pay a 20% luxury tax. But is a bus ride a luxury?

If we could have the same consideration in connection with street use that is given to automobiles, and relief from special discriminatory taxes, I believe that we would do a better job. If we were encouraged, and the use of our vehicles is encouraged, you would find a large part of your traffic problem alleviated.

Hammond: In the US Chamber we realized that the businessmen were not as conscious of public transit and its importance to their welfare as they should be, so recently we brought it to their attention more forcibly by putting out a little publication. It makes seven points to the businessmen that we think are pretty pertinent:

1. We would like to have the businessmen encourage the use of one-way streets, a ban on curb parking, the restriction of turning movements, and the use of modern traffic-signal systems. All those items will help move all traffic and public transit much faster, therefore making less congestion.

2. We would like to see the businessmen encourage the transit companies to use more limited stops, more turnbacks, more express service. And, I will throw in a recommendation of my own, more zone fares.

3. We think that the businessmen ought to discourage unwarranted extensions of transit lines and other unprofitable services which might affect the financial stability of the transit companies.

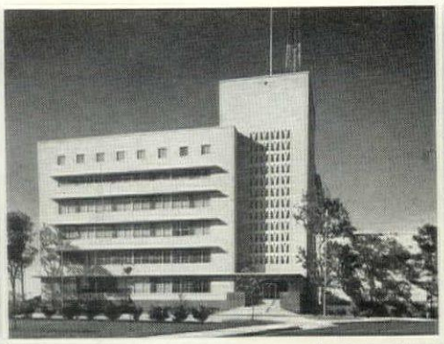
4. We think that the business firms can do a lot to encourage their employees and their customers to patronize public transit. There are a lot of schemes being used today to encourage that. They give their employees a free ride home, for example.

5. We think, too, that there are many large firms that could help spread the transit load by opening and closing their offices at different times than normal, going back to somewhat the same thing we had during the war when we used staggered hours.

6. The utility commissions, I think, with the encouragement from businessmen, could do a lot to expedite their rate decisions. Sometimes a transit company has to wait a year or more before action is taken on its requests for

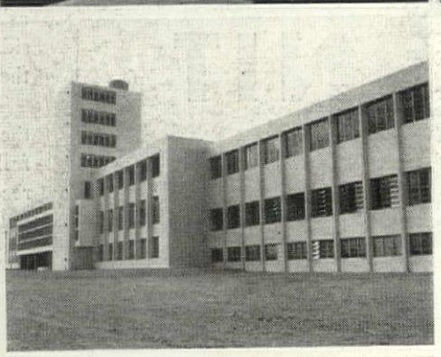
continued on page 178

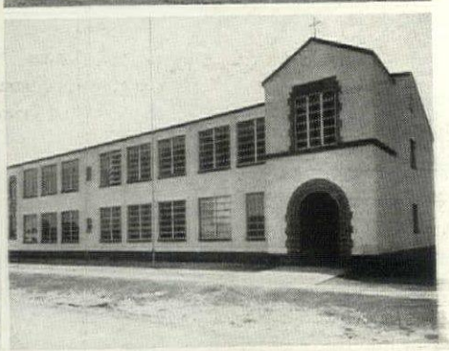
The All-Purpose All-Aluminum MIAMI AWNING WINDOW







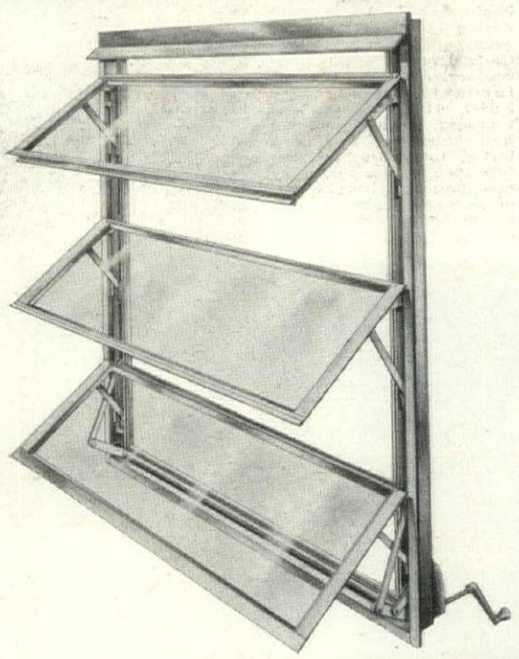




Here's a window architecturally designed to blend into a variety of building designs. Perfect for institutional, home and commercial use, and manufactured to any size up to 6′2″ wide and to any height.

- Heavy aluminum alloy construction (63-ST5)
- Weather-tight through weatherstripping
- Easy installation (standard ½" flange)
- Patented torque shaft for balanced operation
- Windows are cleaned from the inside
- Low unit cost through modern production facilities

First by actual test—Pittsburgh Testing Laboratories Air Infiltration Tests 0.069 C.F.M. per cu. ft. up to 25 MPH.



QUALITY APPROVED A-A1

SEE OUR CATALOG IN SWEET'S

For further information write, wire or phone Dept. AF-2 or see Sweet's Architectural File 3c/Mi

MIAMI *Awning* WINDOW

MIAMI WINDOW CORPORATION

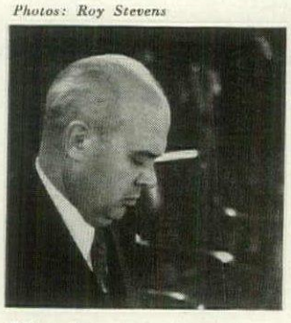
5200 N. W. 37th AVENUE, MIAMI, FLORIDA

FACTORY No. 2 — 4610 N. W. 37th Avenue, Miami, Florida

MIAMI WINDOW CORPORATION OF MISSISSIPPI—Key Field, Meridian, Miss.

MIAMI WINDOW CORPORATION OF PANAMA—Panama, Canal Zone

Photos: Roy Stevens



Crimmins



Ecker: *There should be some control in locating parking facilities so that they will not conflict with street use.*

Swift: *We can't buy a half-price bus for half-fare school children.*



Ketchum: *If you do not spend as much on operating expenses, it is that much money in your pocket.*

a rate increase. Of course, that rate increa is never retroactive, so they have lost mor they could have had for the previous mos.

7. Finally, we think that the businessm should urge that the transit industry be lieved from some of the unfair local taxes a special assessments. There are many tran companies who operate only busses today th are still paying a 5% gross-income franch tax because of the use of the streets for t tracks that they used to have there 25 y ago when they were all streetcars.

Ecker: We are forced by law to carry sch children and sometimes other personnel much less than the normal charge. In Was ington, we have a three-cent school fare whi was set up in 1933 by Congress. At that tin it was approximately half the prevailing ra for the ordinary fare. It still exists, while t cash fare is now 17¢ and the token fare is 15

The riders of the community are carryi these school children who use the service on during the rush period. There is no more re son, in my opinion, for that than for the mi company to supply school children with duced-price milk or free milk.

Swift: We are the only industry that asked, not only to pay school taxes, but to su sidize the education of children by carryi them at a reduced rate.

The insurance companies don't recogni the children as a half-price risk. They are full-price risk. The bus manufacturers don recognize the children either. We can't buy half-price bus for school children.

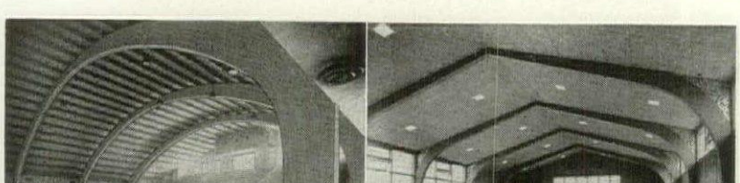
Prentice: Isn't it a fact that the slowne of the so-called rapid transit is one reas for people's preference for coming downto by car or taxi?

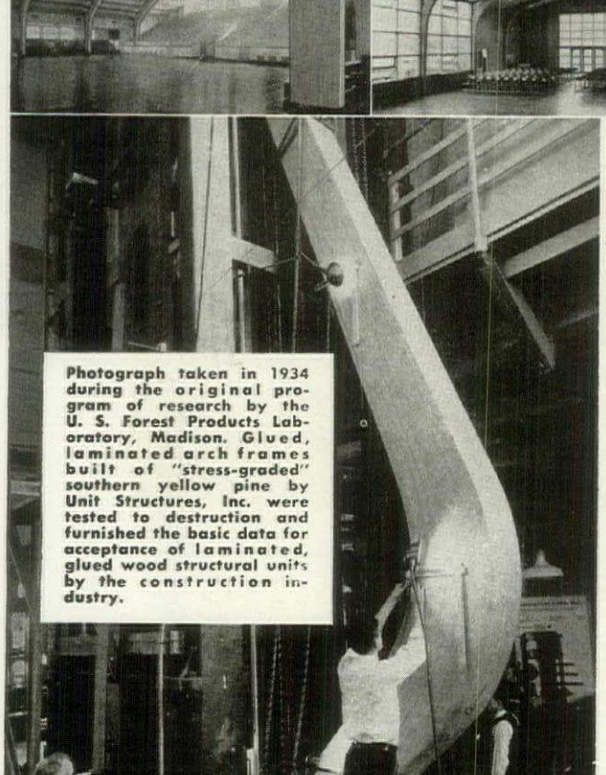
Hyde: I think it is, but I think there something more fundamental. People wh ride in transit are merely passengers, an aren't going to carry the torch. So, you ha maybe one, two or three transit companie in the city that are trying to do somethin to speed up their operations; on the othe hand you have thousands of individual mo torists who are asserting their rights as ind viduals, and putting pressure on publi officials to put in a light here, and chang this, and put in a restriction there.

If we can move our public vehicles faste you can't tell me there aren't many, man thousands of people who won't be ridin transit, just as they did before.

Howard: One effective attack on the down town traffic and parking problem could b applied more widely than it has been, i cities that have or can have express or rapi transit service. It is to develop attractive park ing areas at outlying express terminals, an

continued on p. 18



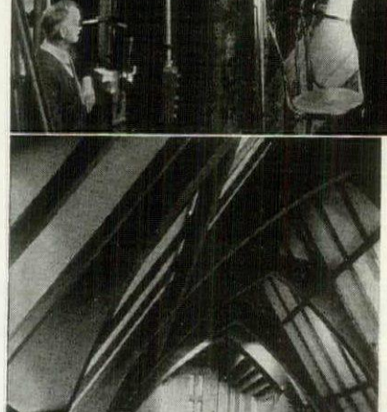


Photograph taken in 1934 during the original program of research by the U. S. Forest Products Laboratory, Madison. Glued, laminated arch frames built of "stress-graded" southern yellow pine by Unit Structures, Inc. were tested to destruction and furnished the basic data for acceptance of laminated, glued wood structural units by the construction industry.

FIRST of Its Kind

and still first in economical construction

UNIT All-glued Laminated Arches



To the design engineer, the decisive advantage of the laminated arch is measured in dollars and cents — low initial cost, low installation cost, no decorating expense, and the very minimum of maintenance.

These savings, plus increased freedom in building design, are identified with all types of Unit laminated structures. They are a matter of record in hundreds of buildings from coast to coast.

The foundation for this most economical method of roof construction was laid back in 1934 when Unit Structures produced the first all-glued, laminated arches accepted for the building industry by the U. S. Forest Products Laboratory. This pioneer leadership in experience and manufacturing facilities is yours to draw on and work with. See SWEET'S catalog for basic arch information; and write, without obligation, for detailed technical information on any specific problem.

UNIT STRUCTURES, INC. PESHTIGO, WISCONSIN

UNIT STRUCTURES, INC.

600 Peck Avenue Peshtigo, Wisconsin



Who says a reinforced Concrete Building can't be Destroyed by Fire...

This building, a $3,920,000 loss, could have been saved with a Grinnell Automatic Sprinkler System

When the smoke cleared away... damage to this "fireproof" warehouse, and the 150,000 tires and tubes it contained, fell just short of the four million dollar mark! What a terrific price to pay for the lesson, already well-known to many, that "fireproof" buildings often serve merely as good stoves for flammable contents.

A Grinnell Automatic Sprinkler System could have prevented this costly fire. Grinnell Sprinklers offer any building... whether it is "fireproof" or not... positive protection against fire.

Grinnell Sprinklers stop fire at its source, wherever and whenever it strikes, night or day, *automatically*. 74 years experience proves this.

Consider the cost of fire... in terms of lives lost; property damaged; records ruined. Then ask yourself if you can possibly afford NOT to fully protect your warehouse, plant, store, theater, club, hotel, school, and hospital. This is especially true when you remember that a Grinnell System often pays for itself in a few years through reductions in insurance premiums. For further details, write: Grinnell Company, Inc., Providence, R. I.

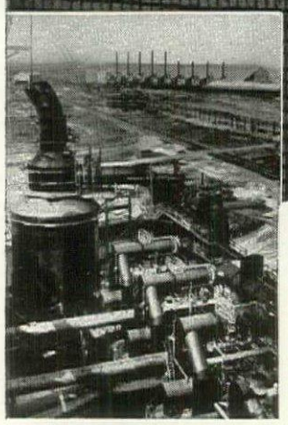
GRINNELL
FIRE PROTECTION SYSTEMS

Manufacturing, Engineering and Installation of Automatic Sprinklers Since 1878

"BIG STEEL" NEEDED

Karnak®

WATERPROOFING PRODUCTS



Fairless Works of United States Steel Corporation's plant at Morrisville, Pa., on the Delaware River, is the country's largest single steel construction project undertaken at one time. Waterproofing done by Lewis and McDowell, Inc., New York City.

When permanent waterproofing was wanted on the foundation of U. S. Steel's new "Fairless Works," Karnak was chosen by the contractor. This is the largest individually financed industrial project in the world and called for the best in all materials. That's why 750,000 yards of Karnak were used to protect against water, wherever there was a hydrostatic head.

Why Karnak? Because it has the Membrane System of waterproofing *that holds secure* against hydrostatic head or any water condition.

The secret to the extreme water resistance is the Karnak Membrane Fabric. Open Mesh Cloth, specially woven of long, fiber cotton is carefully saturated with highly refined asphalt so as to leave the mesh open. When this fabric is layered on the job with alternate moppings of liquid asphalt, it provides a tough, thoroughly waterproof membrane that resists cracks, abrasion and settling to maintain water resistance through the life of the structure.

The non-sticking fabric unrolls easily...to the very end. It "works" faster and with no waste. It saves labor costs on the job.

The Karnak system is also the best for roof patching, skylight flashing, window and door flashing, through-wall and cornice flashing, as well as waterproofing against a hydrostatic head in dams, swimming pools, viaducts and tunnels.

Send coupon for complete information.



Karnak fabric is packed in a sturdy corrugated carton for protected shipping and storage. It keeps the fabric in perfect condition until used...cuts fabric loss.

LEWIS ASPHALT ENGINEERING CORP.
30 CHURCH ST., NEW YORK 7, N. Y.

SEE OUR CATALOG IN SWEET'S FILE

OTHER KARNAK PRODUCTS

Roofing and Waterproofing Fabric	Caulking Compounds	Aluminum Roof Coating
Asphalt Roof Coatings and Cements	Asphalt Emulsions	Wood Block Mastic
	Floor Mastic	Tile Cement
	Asphalt Paint	Joint Filler

LEWIS ASPHALT ENGINEERING CORP.
30 Church St., New York 7, N. Y.
Please send me ***FREE*** information about
KARNAK Membrane System of Waterproofing

NAME_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

*Other items I'd like to know about*_____

at the same time to plan highway improvements to make these places more accessible than downtown. This would bring triple economies: to the traveler, to the community and to the transit system. It obviously costs less per car to provide parking space at outlying terminals than in downtown lots or garages. Checking the increase in traffic flow to downtown would cut the need for many miles of multimillion-dollar intown expressways, the most costly parts of our street systems. The increase in transit riding might ease the deficits that are now endangering these essential services. And the traveler himself would make his journey from home to destination as quickly or quicker than by driving all the way. At a terminal, he would probably get a seat, and would willingly pay a premium fare. He could even pay a parking charge, and still save money—unless alternative downtown parking were subsidized. This kind of solution, with its triple savings, clearly requires triple coordination: among the city planners and highway builders, the transit operator, and the private or public parking developers. But it is so obviously advantageous that I cannot see why it has not been more fully tried in more cities.

What must be done to take trucks out of traffic, to speed deliveries and to reduce distribution costs?

Evans: We have been talking about movement of passengers and people. The other side of the coin is movement of goods. After all, the business district is the place for interchange of goods and services, and it takes both people and goods.

We all know the truck problem has been growing faster than the other problems of urban traffic. Truck registration has increased 101% since 1940, whereas automobile registration has only increased 60%. Probably that trend will continue.

So, we come down to a competition between passengers and goods on the streets. Faced with this competition, goods cannot move to another form of transportation, as in the case of passengers. Instead, there is an increase in the cost to the merchants and to the consumers of the goods.

We know that of the total trip time in local cartage, unnecessary delays run about 40%. In trying to get the goods delivered, the problem of delays in moving through traffic and in loading and unloading becomes a significant factor in the cost of moving the goods. Here are five solutions that have been worked out for this problem in the pick-up and delivery of goods.

continued on p. 182

— So You Want To Reduce Construction Costs

But You Don't Want a Standardized Steel Building—HERE'S YOUR ANSWER



Here's a Structural System made of five standardized members, available in three standard bay sizes—but YOU are still the architect.

With V-LOK Interlocking Steel Members, you can design a completely modern home or school, industrial plant or commercial garage, a dairy store like the one illustrated or a complete shopping center, a second story on any parking lot or a ramp for elevating auditorium seats. You name it.

All structural members lock together into a rigid, load carrying frame in a matter of hours instead of weeks. Future expansions can be made from any side as desired.

Architects, across the country are investigating the design possibilities of V-LOK. Building contractors are making new records in construction time. Owners are receiving income at earlier dates. V-LOK is truly a miracle of modern construction.

Why don't YOU investigate it?

PATENTED
U. S. Patent Nos.
2,184,113
2,457,250
2,457,056

STANDARD BAYS 20′ BY 20′
20′ BY 30′
20′ BY 40′

see our catalog in PLANT ENGINEERING FILE or write for copy



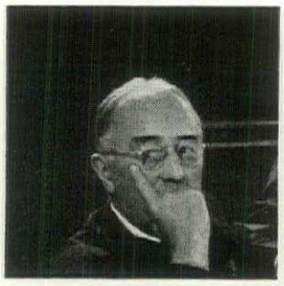
V-LOK STEEL BUILDINGS

STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER • INCORPORATED

CANTON, OHIO

V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

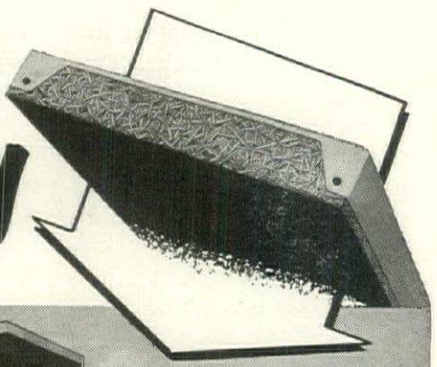


Banks: *One of the trucker's biggest problems is the lack of freight elevators.*



Simon: *Investment in highways is not a burden on the economy; it is an investment in prosperity. Adequate roads don't cost money; they save money.* **Smith; Owen:** *We have done a poor job of pricing transportation.*

Quality + Economy





For Schools
Churches
Hospitals
Factories
many other uses

ESSO Office Building, Pelham, N.Y.: 22,100 sq. ft. of 3¼" POrex Plank
Architect: Sidney Schenker Gen. Contractor: Joseph Garry Co.

COMPOSITE POREX

Insulating & Acoustical
PRECAST ROOF DECKS

spans 8 feet
weighs only 14 lbs. per sq. ft.

Provides
—Insulation (U = 0.15 Btu)
—Sound Absorption (90% at 512 cycles)
—Incombustibility
—Nailable Finish

PORETE MFG. CO.
North Arlington, N. J.

PORETE Products include:
PORETE Channel Slabs · PORETE Nailable Plank
Poretherm · Porex

ROUND TABLE *continued*

We contacted quite a cross-section of people in this field to get their ideas and have condensed them under five headings:

First of all, there are things that can be done on the truck itself for improved handling of goods. The truckers themselves are to blame in many cases for not properly routing their drivers, and in some cases for not having a helper along when he is needed. In other words, they can speed up their deliveries themselves in the placement and manipulation of the goods in the truck and in the scheduling of deliveries.

Second, we come to the truck-loading space at the curb or in alleys. When the truck gets there, too often there is no place for it to stop, so it must stop in the traveled area. This is a matter for the city to handle in most cases; it must see that space at the curb and in alleys is set aside and kept free of other vehicles so that trucks can load and unload.

Third is more efficient use of the street through traffic controls, one-way streets, restrictions on turns, load consolidation. Truck terminals prove helpful, where big trucks can unload into smaller units and deliveries can be consolidated. One Boston businessman has told of 17 trucks calling in a single day to pick up what could have been handled by two trucks operating fully loaded and destined for a central terminal. St. Louis truckers have worked out a load-consolidation plan that is working out very successfully.

Fourth is in the provision of off-street space for loading. More and more cities are making that compulsory in new buildings, and the last count, in 1951, showed 107 local governmental units doing this (97 cities, eight counties, two townships). This is a slow process for remedying the problem, since such zoning ordinances are not made retroactive. But in my estimation it is one of the most promising and effective solutions.

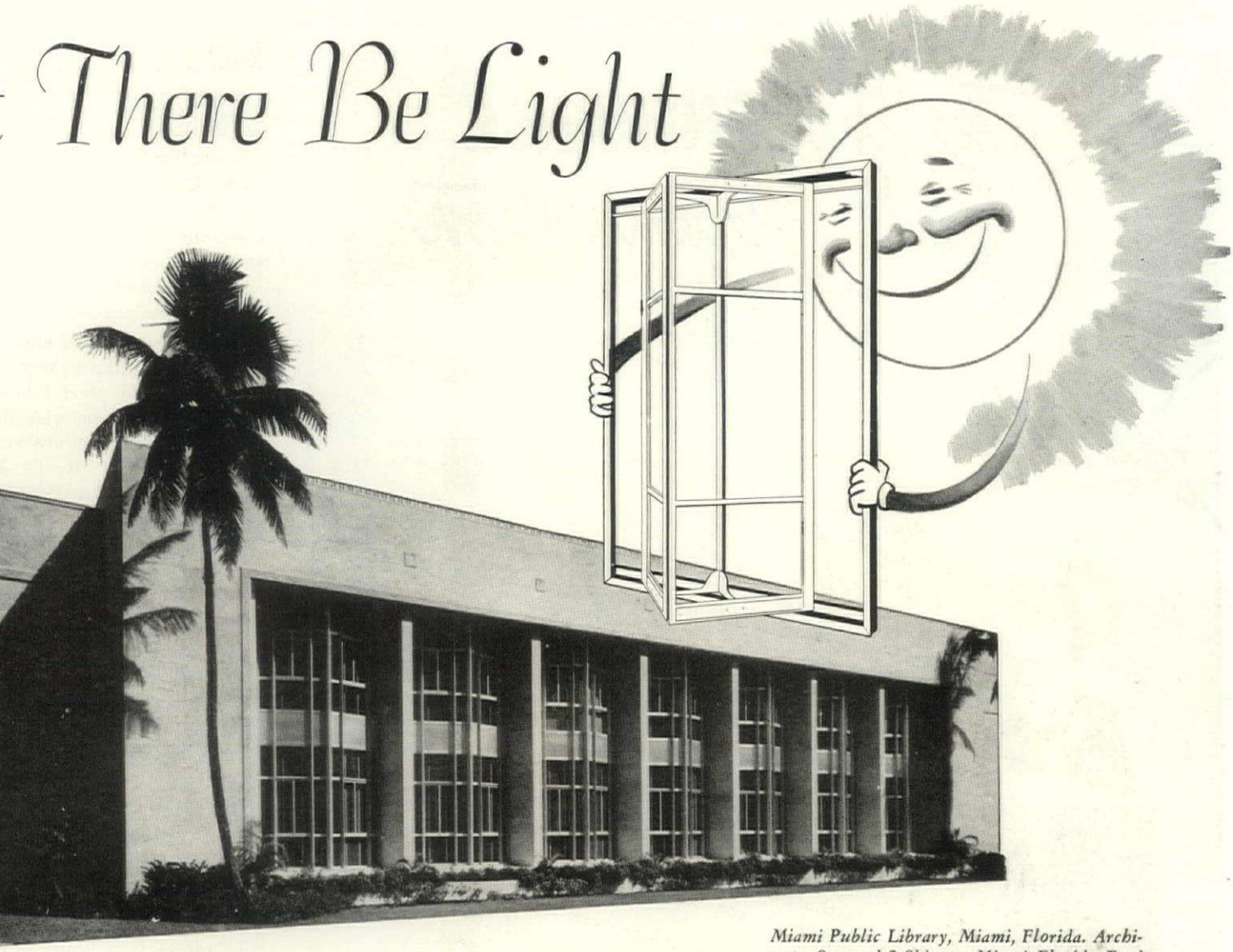
Finally—and this may be a little more controversial—there is the matter of decentralization or a spreading out of points of delivery and receiving of goods. The building of branch stores in the suburbs instead of adding to the downtown store is an example. This solution to the problem is a last resort, however, in my opinion.

Pick-up and delivery delays are costing consumers money. The average total cost for a truck operation in traffic is 5¢ to 10¢ per min., including operating overhead and wage costs. So, a 20-min. delay in pick-up while driving around looking for a spot to unload or an extra half-hour taken in making delivery, which is not at all unusual, represents $2 to $3 added cost to that particular delivery.

Barnes: We have worked out a satisfactory solution to this problem in Denver. We eliminated parking in about a two-square-mile

continued on p. 184

...Let There Be Light



Miami Public Library, Miami, Florida. Architects: Steward & Skinner, Miami, Florida. Fred Howland, Inc., Miami, Florida, Contractor.

with Sealuxe BROWNE "FOLDING FLUE" WINDOWS

There is a good reason why the Miami Public Library chose SEALUXE-BROWNE Folding Flue Windows. They know the importance of light to protect precious vision. Streamlined sash and members of each SEALUXE-BROWNE Window permit a maximum glass area for more light, in fair weather or foul. SEALUXE meets the need for plenty of daylight on overcast days, as well as 100% controllable DRAFT-FREE ventilation.

ARCHITECTS NOTE: Economical SEALUXE-BROWNE Window metal and glass area costs less than comparative masonry construction. UNIVERSAL CORPORATION can help solve your design and engineering problems. Our authorized agents are in ALL of the architectural centers to assist you with your preliminary drawings.

J. P. TRAVIS, *President*

Sealuxe *Engineered Accessories!*

- Ventilating Picture Windows
- Cellular Spandrels and Fascias
- Rectangular Fins
- Polygonal Fins
- Dormer Surrounds
- Canopies (Eyebrows)
- Solar Shades
- Weather Controls
- Integral Radiation and Conduit Compartment

N OR SHINE! SEALUXE-BROWNE
ding Flue Windows are . . .
ST PROOF — NOISE PROOF — RUST
OOF — FIRE PROOF — DRAFT PROOF

Universal CORPORATION

6710 Denton Drive, Dallas 9, Texas

MR. ARCHITECT

take this ENTRANCE examination

about the doors you specify for your clients



YES	NO	
☐	☐	Is the entrance draft-free, avoiding discomfort for customers and employees?
☐	☐	Does the entrance prevent wasteful heat loss, on cold blustery days?
☐	☐	With air conditioning, does the entrance keep out heat, to minimize operating costs?
☐	☐	Does the entrance assure orderly flow and prevent traffic jams during rush hours?
☐	☐	Is the floor space completely usable, right up to the entrance?
☐	☐	Does the entrance keep out dust and dirt, to reduce frequency of redecorating and cleaning, and merchandise spoilage in sales areas?

If your answer is NO to any of these questions, you owe it to yourself and your clients to investigate the advantages of a revolving door entrance. Only with revolving doors can you answer "YES" to all these questions! International-Van Kannel revolving doors . . . "always open—always closed" . . . pay for themselves. May we give you the proof? Call the number in the classified section of your phone book, under "Doors — Revolving." Or write to the Revolving Door Division, International Steel Co.



Revolving door illustrated is International's new Standard Model . . . production built and priced . . . time-tested custom features . . . universally adaptable



IN CANADA: International-Van Kannel revolving doors are available through Eastern Steel Products, Ltd., in Toronto and Montreal.

Write NOW for your Free Guide to Planning Better "Packaged Entrances"

LONGEST SERVICE — LEAST SERVICING

REVOLVING DOORS

INTERNATIONAL-VAN KANNEL

1959 EDGAR STREET — EVANSVILLE 7, IND.

area on the numbered street
Denver. We began with a
there would be no parking
cial vehicles on those streets
and 10:00 in the morning.
compromise between the tru
merchants, we reduced that to

The city was writing anywh
100 double-parking tickets d
before that plan went into
has been in operation, which h
over a year now, they are wri
or four tickets per day for
and many of the trucking c
the larger haulers and the pa
—the commission-type sales
truck, the meat truck, and
making their deliveries in the
as much as five hours faster
to make them because they c
in the morning, pull up to t
their store-door delivery, and
rarely see a truck in the
making deliveries after 11
morning.

Prentice: There is another
that has to do with the fact
the streets are not used. The
try certainly operates nights.

Hammond: Freight elevators
there.

Evans: And labor contracts.

Banks: One of the biggest pi
York City is the lack of freig
commercial buildings. Anothe
a lot of areas in New York C
nesses have sprung up. They a
tightly packed into small are
greatly increased the number
commercial buildings. Many
door to handle all the freig
tenants in the building.

They work so close with
and their finished products,
them actually have to move out
before they can bring in their
for production.

When you break deliveries d
units, you have to put more
area.

Trying to better condition
York City garment area, we e
ple to work early. It was the
element that defeated the pla
boss, the fellow that ran the
the one who checked the del
did everything, and he'd be da
going to come in at an earlier
any goods into his place.

The only way you are goin
coordination and do a better jo
more people make distribution
and I think it is a problem
It is certainly a problem for th

Ever have a 2-way roof deck problem like this?



A. M. CASTLE & CO.

"Everything in Steel." Founded in Chicago in 1890, the company has steadily expanded to nine distributing plants. Above is shown the Baltimore plant.

Architect . . . . . Lucius R. White, Jr., Baltimore

General Contractor . Goodman Construction Co., Inc.

Roof Deck Applicator . J. B. Eurell Co., Lansdowne, Pa.

THE PROBLEM. How to provide a permanent, economical roof deck for this steel warehouse that meets two requirements: summer and winter living comfort for the office (1)...fire protection for the warehouse area (2).

SOLUTION. Over the office space, Gold Bond *Insulation* Formboard was laid to give the needed insulation. Over the warehouse, Gold Bond *Gypsum* Formboard was laid to give low-cost fire protection. Then Gold Bond Gypsum Concrete was "Poured in Place" to form the roof deck. Besides Insulation Formboard, and fireproof Gypsum Formboard, Gold Bond *Econacoustic* Formboard can be used to insulate *and* sound-condition.

ADVANTAGES:

1. Lightweight. 66% lighter than concrete, reducing dead load and cost of entire supporting structure, including columns and foundations.

2. Versatility. Adaptable to any design—curved, sloped or flat.

3. Speed. Quick set gives full working load capacity in less than 30 minutes, and roof covering can be applied within 24 hours!

4. Low maintenance. If changes are ever necessary, a Gold Bond Poured Gypsum Roof Deck can be cut, nailed or patched easily and quickly.

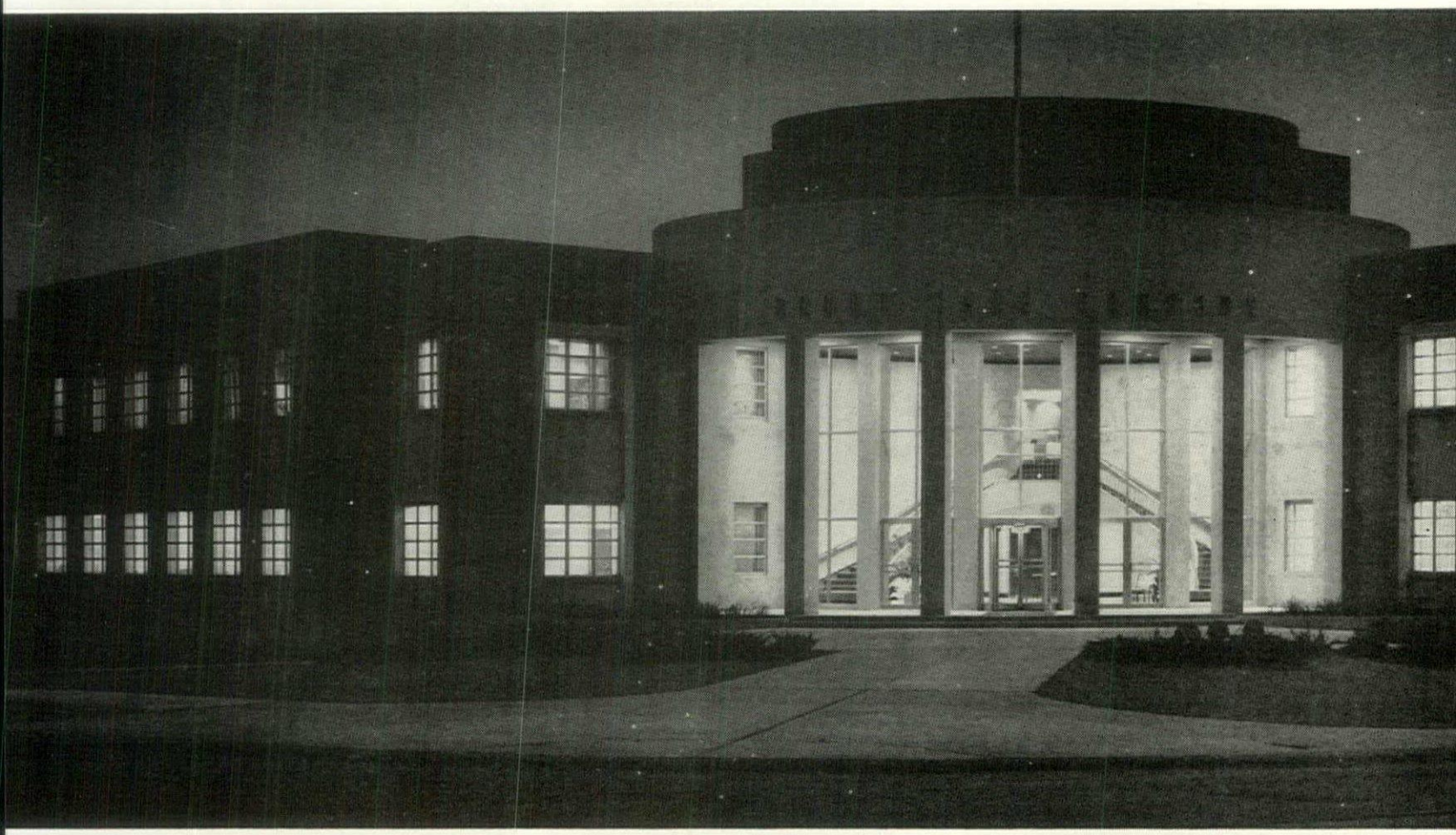
Gold Bond Gypsum Roofs are installed only by approved fireproofing contractors. Write our Architect Service Department for detailed drawings and load tables.

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

Lath, Plaster, Lime, Sheathing, Gypsum Roof Decks, Wall Paint, Textures, Rock Wool Insulation, Metal Lath, Sound Control Products, Fireproof Wallboards, and Decorative Insulation Boards.

You'll build or remodel better with Gold Bond

A distinguished new St. Louis office building



Another Day-Brite lighted architectural achievement

This is the new home of the Brown Shoe Company.

It stands in Clayton, Missouri, a suburb of St. Louis. The Brown Shoe Company is one of the pioneers in the movement toward decentralization of manufacturing headquarters in the St. Louis area. Company officials feel there are invaluable advantages in a less distracting, more comfortable environment for their executive, sales and office people. A $3 million investment in the building and grounds speaks for the courage of their convictions.

The building design is contemporary but in keeping with the trend of architecture in the community, there is a skillful blend of Colonial.

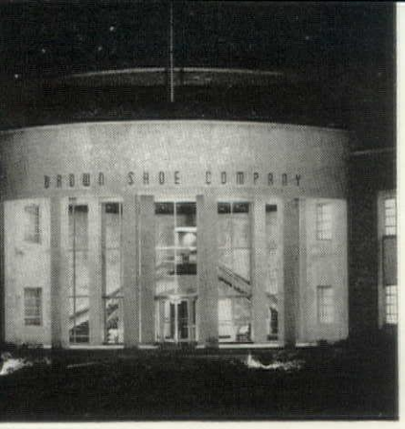
From the dominant entrance rotunda throughout the office space inside, there is everywhere evidence of far-sighted planning and sound specifying.

Extreme flexibility of interior design permits easy and quick rearrangement of offices, if and when needed. The whole building is air-filtered and air-conditioned. More than a mile of glass enclosed Day-Brite troffers provide one of the finest office lighting installations you've ever seen.

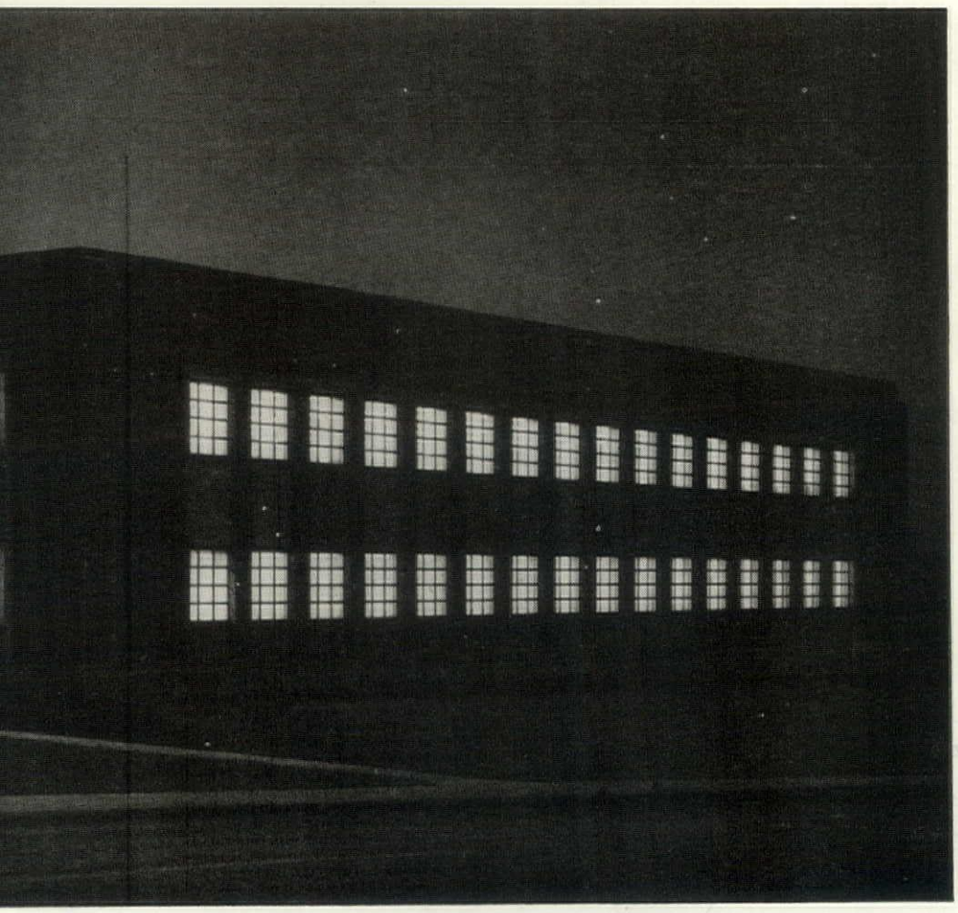
Ten years from now . . . yes, twenty years from now . . . the Brown Shoe Company headquarters will still rank with the best lighted office buildings in the nation. That's one of the reasons for Day-Brite's selection. There's a premium of *extra years of trouble-free service* that comes with Day-Brite.

Day-Brite offers that same benefit to every architect or engineer who is sincerely concerned with giving his client the very most for every lighting dollar spent.

We invite *your* request for more complete Day-Brite information.



Architects:
Russell Mullgardt Schwarz Van Hoefen
Consulting Engineers:
Ferris & Hamig



The handsomely appointed Board Room is featured by an interesting lighting layout, as are all executive offices. Here, an area of recessed panels is fitted into the beamed ceiling for general illumination. Cove lighting adds luxurious richness.



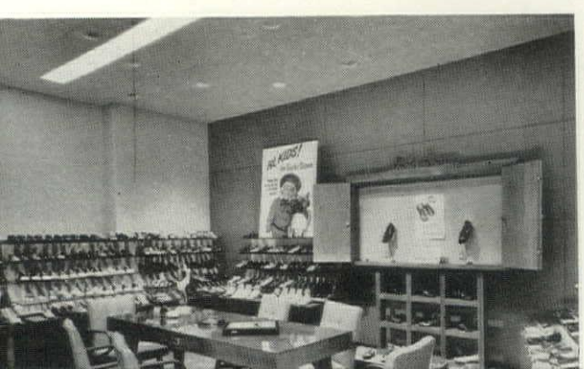
In the large office areas, Day-Brite glass enclosed troffers produce excellent visual comfort for the Brown staff as well as plenty of light for close work (40 footcandles maintained). Notice the flexibility of the lighting layout, too. Bays may be partitioned from floor to ceiling without rearrangement of the fixtures.



DAY-BRITE TROFFER DATA: Troffer line available in Slimline and Rapid-Start 40.W Fluorescent, flange or snap-in type. Die-formed steel construction. HOT-BONDED SUPER-WHITE enamel finish, rust inhibited. Interchangeable series of shielding units includes BOXCO (®) louvered, egg-crate louvered, glass enclosed, low-brightness No. 9015-DB Controlens*, and curved 11" Controlens*. Safety fused and UL approved.

For further information, write DAY-BRITE LIGHTING, INC., 5471 Bulwer Ave., St. Louis 7, Mo. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

315



Sample show rooms merchandise the Brown shoe line through good display and good lighting. A combination of troffer illumination and incandescent spots is used. This sample room features "Buster Brown," one of Brown Shoe's nationally famous lines.

*®Holophane Co.

"DECIDEDLY BETTER"
DAY-BRITE®
Lighting Fixtures

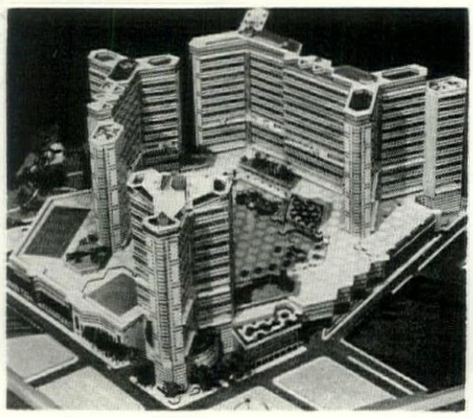
DESIGN FOR THERAPY. The American Psychiatric Association, 1758 Massachusetts Ave. N.W., Washington 6, D.C. 77 pp. 7½" x 10". Paper bound. $1.25

An architect will be building for his most sensitive and critical audience when he designs a mental hospital. The acutely disturbed sensibility of a patient will be affected, for better or worse, by the smallest structural detail—the lack of a closet, difficult access to the grounds, a forbidding facade. The problem of atmosphere is as delicate a one as that facing a scene designer for "Swan Lake."

Equally responsive to the successes or failures of the building will be relatives and friends of the patient who, in most cases, are prejudiced against mental institutions and afraid of them. Yet these people—and doctors wisely agree—are the architect's real clients and it is *their* wants and feelings which must be satisfied by the design of the building.

But those who "design for therapy" are required to answer to yet another serious challenge. At a conference of the American Psychiatric Association, of which this book is a summary report, Dr. Ralph M. Chambers put it this way: "Present-day mental hospitals are inadequate and more or less obsolete . . . principally because buildings are, of necessity, too permanent for types of occupancy having a high rate of change in methods and space requirements." What is called for is "flexibility for week-to-week variations in use," as well as provisions for major alterations and/or expansions.

Design for Therapy, made up of discussions and papers by architects, hospital administrators and psychiatrists, is a good beginning. The specially convoked conference called for a close collaboration between architects and psychiatrists that they may exchange information and work together in the building of mental hospitals. The book cites needs and problems. Its proposed solutions, however, are only tentatively sketched in.



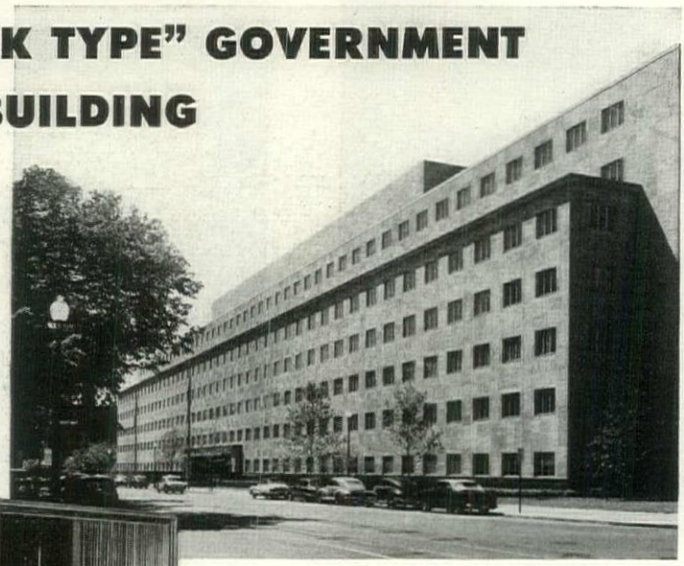
HIGH PADDINGTON—A TOWN FOR 8,000 PEOPLE. By Sergei Kadleigh. Iliffe & Sons, Ltd., Dorset House, Stanford Street, London S. E. 1, England. 40 pp. 11½" x 8½". Illus. Paper bound. $1.25

This book presents a grandiose architectural proposal atop 18 acres of London railway tracks. It is a 30-story building complex, hexagonal in plan and fenestration. Parking areas and shops occupy three concourse levels. Above them rise skip-level elevated towers of duplex apartments. On the top floors are two primary schools, a clinic and a hospital, hotel and restaurant, meteorological station, parish hall, vicarage and church—everything but a cricket field! Each two-story apartment is as spacious as a small house with a 325 sq. ft. garden terrace.

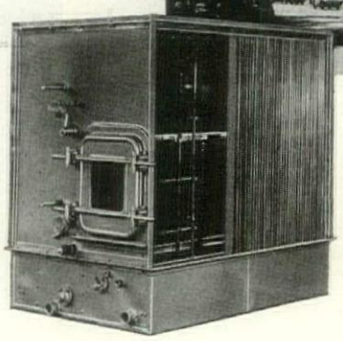
The scheme proposes to help solve Britain's housing problem without encroaching upon her limited agricultural resources, but the net density (445 persons per acre) seems too high to permit the projects' development.

continued on p. 192

47 Marlo DEHUMIDIFIERS AIR CONDITION HUGE "BLOCK TYPE" GOVERNMENT BUILDING



General Contractor: John McShain Company, Philadelphia.
Air Conditioning Contractor: W. H. Singleton Company.
Architects and Engineers: General Services Administration, Public Buildings Service



MARLO Dehumidifiers are equipped to handle all humidifying, cooling and dehumidifying needs. Easy to erect, economical to operate.

The new $25,000,000 home of the General Accounting Office is seven stories high and covers an entire city block. It has no wings or courtyards. Interior areas must depend on air conditioning for proper ventilation.

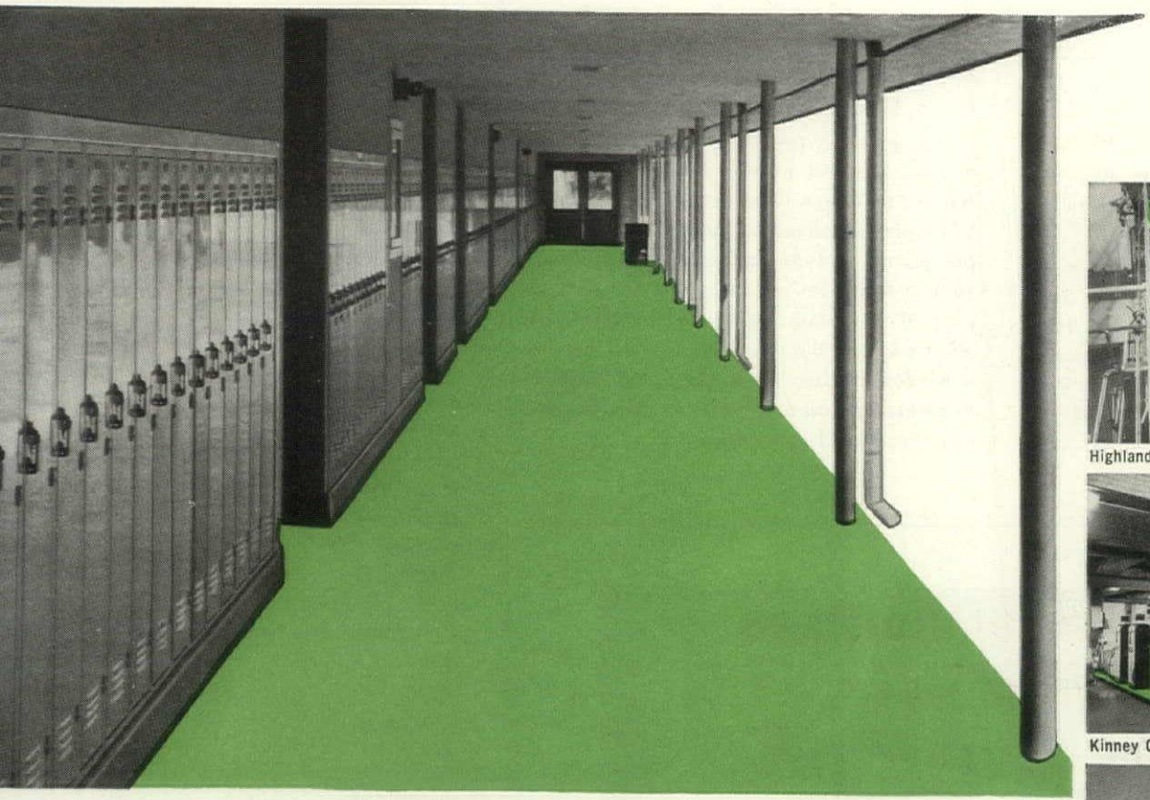
Forty-seven MARLO Spray Type Dehumidifiers, with chilled water cooling coils of approximately 4200 tons cooling capacity, were chosen for the gigantic task of conditioning the air in this second largest government building in the Washington area . . . circulating 1,000,000 cubic feet of "conditioned" air through the building every minute through 27 miles of ducts.

MARLO equipment meets every air conditioning need . . . better! Write today for detailed information on the complete MARLO line.

Marlo COIL COMPANY

Manufacturers of COOLING TOWERS • EVAPORATIVE CONDENSERS • INDUSTRIAL COOLERS • AIR CONDITIONING UNITS • MULTI-ZONE UNITS • BLAST HEATING & COOLING COILS

Saint Louis 10, Missouri



Menlo-Atherton High School, Menlo, Calif.

modern design calls for

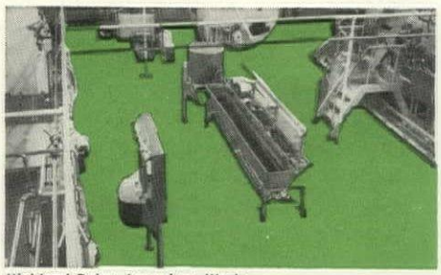
COLORUNDUM

for colored concrete, floors and sidewalks trowelled into the fresh concrete topping.

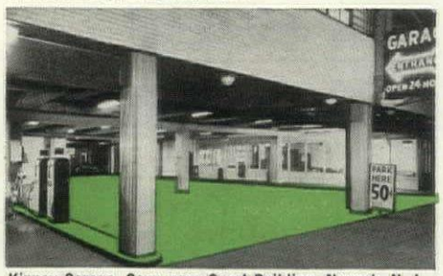
Attractive colored, non-slip, non-metallic interior or exterior traffic areas can be produced by dusting on and trowelling Colorundum into the fresh concrete topping. Users know the colorful appeal of Colorundum in showroom floors, sidewalks, patios, hospital and school auditoriums, cafeterias and corridors. Colorundum is a balanced formulation of water-repellent compounds, non-slip aggregate, next to the diamond in hardness and durable colors, in red, maroon, brown, green, dark-green, french grey or black. These floors remain resistant to years of traffic and require minimum maintenance. Colorundum is used for new or when replacing existing concrete floor areas.



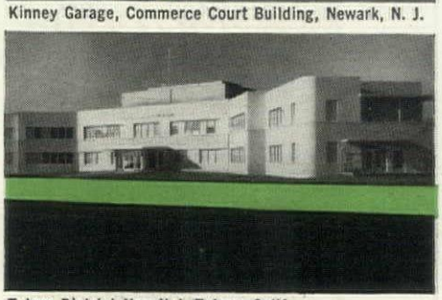
Concrete roof slabs with Colorundum, Wilshire Medical Building



Highland Dairy, Longview, Wash.



Kinney Garage, Commerce Court Building, Newark, N. J.



Tulare District Hospital, Tulare, Calif.



King Cole Market, Los Angeles, Calif.



Wilshire Medical Building, Los Angeles, Calif.

A. C. HORN CO., Inc.

est. 1897

Manufacturers of materials for building maintenance and construction
LONG ISLAND CITY 1, N. Y. • Los Angeles • San Francisco • Houston
Chicago • Toronto SUBSIDIARY OF SUN CHEMICAL CORPORATION

A. C. HORN COMPANY, INC.,
Long Island City 1, N. Y.

AF-53

Please send me ☐ complete data on COLORUNDUM

HORN PRODUCT

☐ free copy of your 106-page Construction Data Handbook



NAME_____ TITLE_____

FIRM NAME_____

ADDRESS_____

CITY_____ STATE_____

ARCHITECTURAL DETAILING. By Caleb Hornbostel and Elmer A. Bennett. Reinhold Publishing Corp., 330 W. 42nd St., New York 36, N. Y. 221 pp. 9" x 12". Illus. $12

This is an extremely well-presented and well-organized reference book that shows the sort of architectural details (165 of them) that you will not find in standard reference manuals. This fact gives the book its principal interest; it also accounts for some of its weaknesses.

It is probably fair to say that you can tell a good architect by the detailing that goes into his buildings. This detailing is the architect's personal handwriting, just as much as his plans, facades and ideas about space, volume and mass. In fact, after the first impact of a building upon the onlooker has worn off, it is the detail of a railing here or a window mullion there which will continue to arouse interest and testify to the designer's consistency and competence.

Now this means that the "handwriting" you can find in an architect's details is a very personal thing—just as personal as his real handwriting. A special detail (like a large sliding wall, for example) is therefore not just a special piece of installation in itself; it becomes a very special design problem in the hands of each individual architect. Nobody knows this better than Architect Richard Neutra, who has written a stimulating foreword to this book, for his own file of stock details is as famous as it is distinctively "Neutra." In other words, it was compiled to fit into a Neutra building; it would never fit into a building by Frank Lloyd Wright, say, or by Carl Koch.

The details collected by Messrs. Hornbostel and Bennett are, therefore, fascinating specimens of different people's architectural handwriting. This means that many sensitive and original designers will not find these details directly applicable to their own work. True enough, it is worth anybody's time to study a store detail by Ketchum, Gina & Sharp; a suspended stair by the Hunters; or an aluminum window wall by Belluschi. But unless your name happens to be K., G., S., H. or B., chances are that you would not do the same thing in your own building.

This is not to say that there are no universal details in this book; there are. But by and large, the details are special and easily identified with one particular designer's way of doing things.

The book is organized in two sections: first comes a discussion of certain building types (offices, labs, banks, stores, bars, schools, auditoriums, residences and miscellaneous small structures). In each category some fairly typical problems are shown, together with the details used by different architects to solve them. Second is a section on basic details (those relating to sun control, ventilation, lighting, signs, bathrooms, kitchens, stairs, fireplaces, doors and windows). In every case a photograph of the finished job accompanies the detail drawings.

Three minor points of criticism: Each subsection is prefaced with an index to the details subsequently shown, together with a discussion of the problem and the solution. It would have been better if these had appeared on the same page with the actual detail, as a long caption, perhaps. Second, it might have been interesting if the authors had added a note stating, quite frankly, how well the detail had worked out in practice. There are a few details shown here that many architects would question seriously. Finally, there are some glaring omissions in certain categories and readers of this magazine may find them as puzzling as this reviewer.

If the above criticism seems too harsh, it is only because this is such a really good and useful book; and, like all good and useful things, it makes you ask whether it couldn't have been just a little better.



Why Carrara Glass

is the preferred material for washrooms, walls and partitions

• The quality of Carrara Structural Glass is outstanding. Every piece is mechanically ground and polished. It permits joints that are true and even, without lippage or warpage.

Carrara's smooth, homogeneous surface is unaffected by moisture, soap, damp atmospheres and pencil marks. It won't absorb odors.

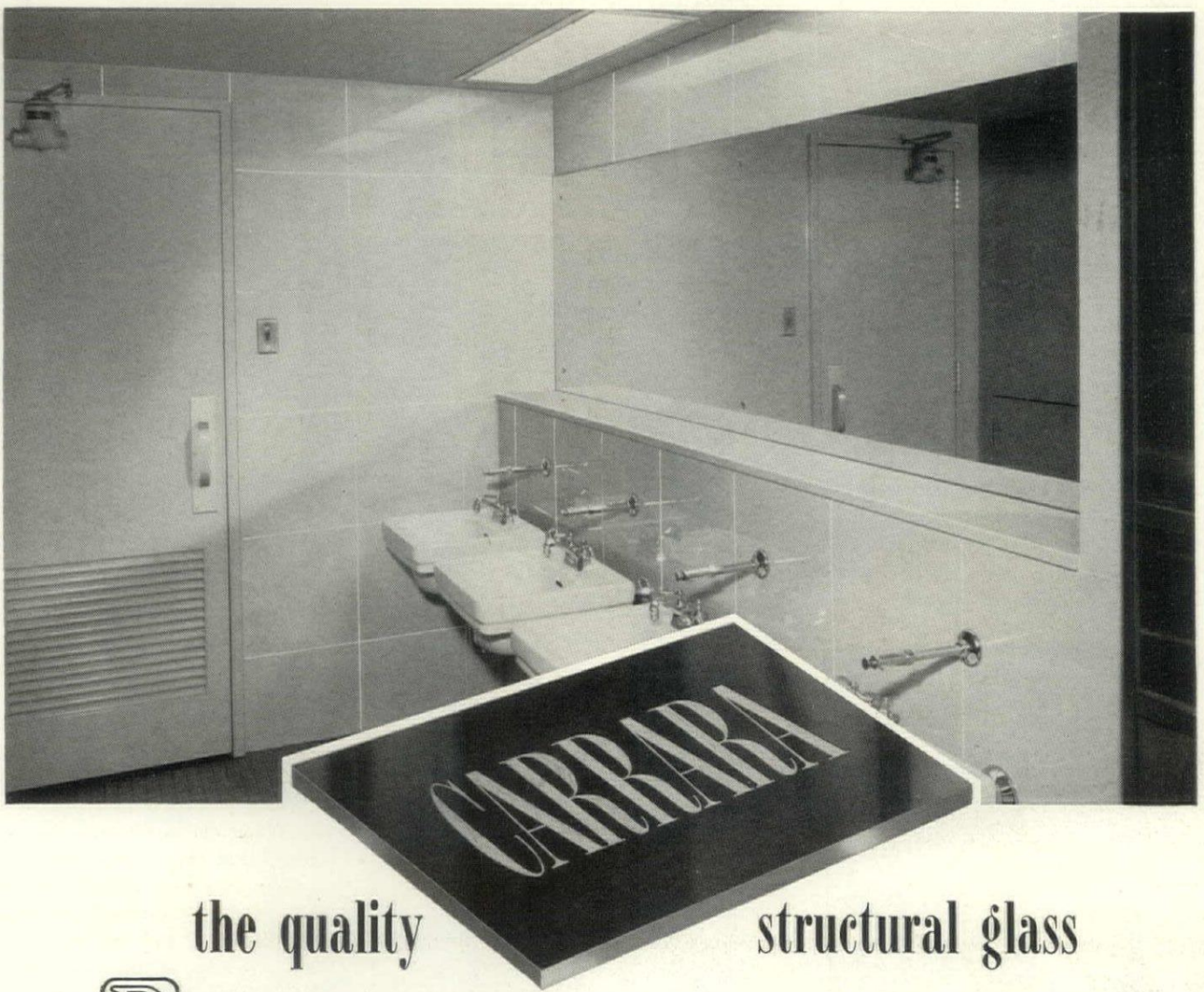
The finish of Carrara Glass is permanent. It won't check, craze, stain or fade.

Carrara Glass is sanitary . . . and easy to keep clean. It is installed in large sections with fewer joints and crevices to catch dust and dirt.

The versatility of Carrara Glass . . . its ten glowing colors . . . makes it adaptable to any number of design possibilities. Many of America's most famous buildings, designed by leading architects over the past fifty years, have washrooms with walls and partitions of Carrara Glass.

For the detailed information on Carrara Glass, consult Sweet's Catalog, or write Pittsburgh Plate Glass Company, Dept. 3113, 632 Duquesne Way, Pittsburgh 22, Pa.

Mellon-U. S. Steel Building, Pittsburgh, Pa.
Architects: W. K. Harrison, M. Abramovitz, New York, N. Y., and W. Cocken, Pittsburgh, Pa.



the quality structural glass

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

PRODUCT NEWS

GYPSUM AND PAPER SANDWICH: low-cost partition can be molded at job site

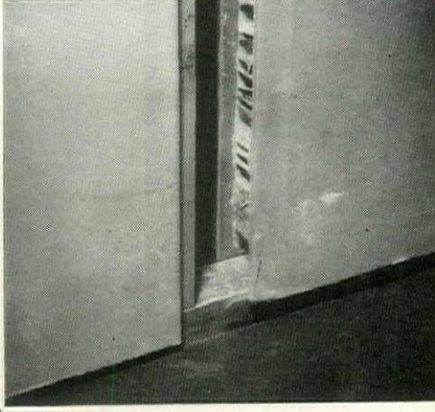
At 35¢ per sq. ft. installed, Sico's fire-resistant partition should make a big dent in the high-priced clique of interior wall systems prefabricated for offices, factories, hotels and apartment buildings. Unlike its more sophisticated honeycomb cousins which have metal, plywood or cement board faces over resin-impregnated paper cores, the Sico sandwich is made of plain gypsum board bonded to a plain paper center with plain plaster. Instead of requiring an intricate process to weld core and facing materials, the Sico units are laminated on a simple press. Because of the fragility of preassembled gypsum board in transit, it might be feasible to make the panels on the job. Sico will license the patent-covered process to local contractors.

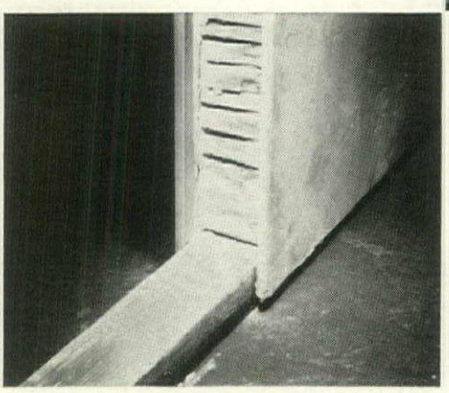
Erected, the walls look much like interior residential dry-wall construction. Not visible is this essential difference: studs are wedged between butted panels (recesses are made to receive 2 x 3's sideways during the forming) every 4′ instead of being nailed in a frame 16″ o.c.

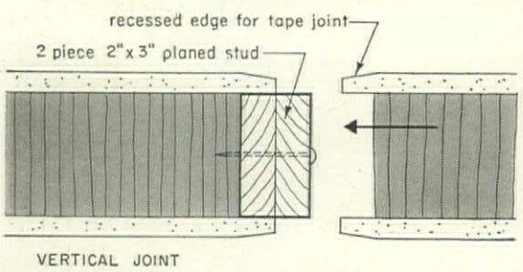
A single thickness of ⅜″ gypsum wall board will take a 20 min. fire test; the Sico panel received a 1 hr. fire rating in private laboratory tests. Its fire resistance can be increased by filling the honeycomb core with perlite or similar material.

Measuring 3⅜″ thick (two faces of ⅜″ board over a 2⅝″ paper core), a single section can take a six-ton vertical load and has withstood transverse loads of 250 lbs. Although not designed as load-bearing walls, exterior panels (made by a similar process but with asbestos cement panels and a portland cement binder) will help hold up the roof—which, by the way, can also be made of Sico units.

Manufacturer: Sico Inc., Newton Ave., Portsmouth, N. H. *continued on p. 196*

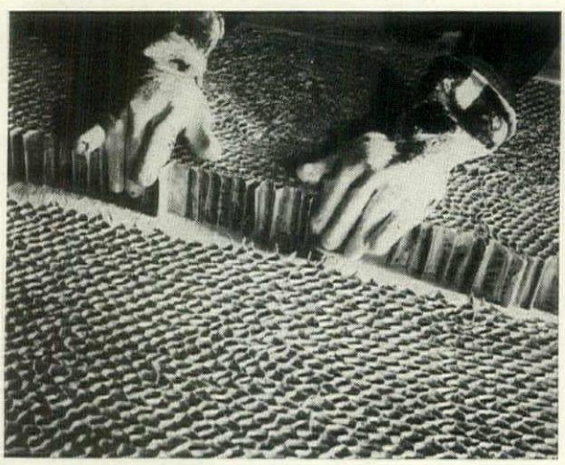




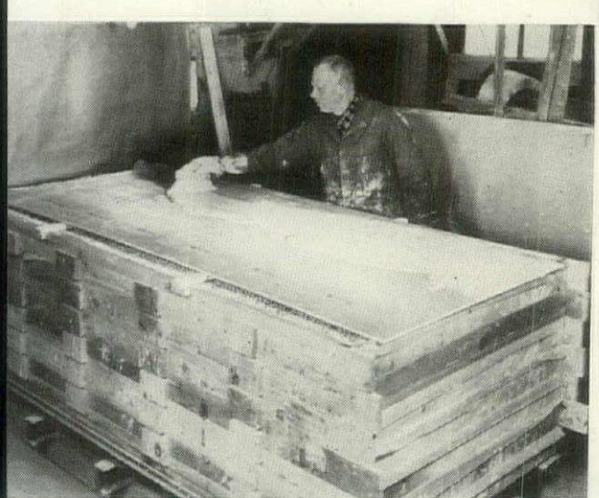


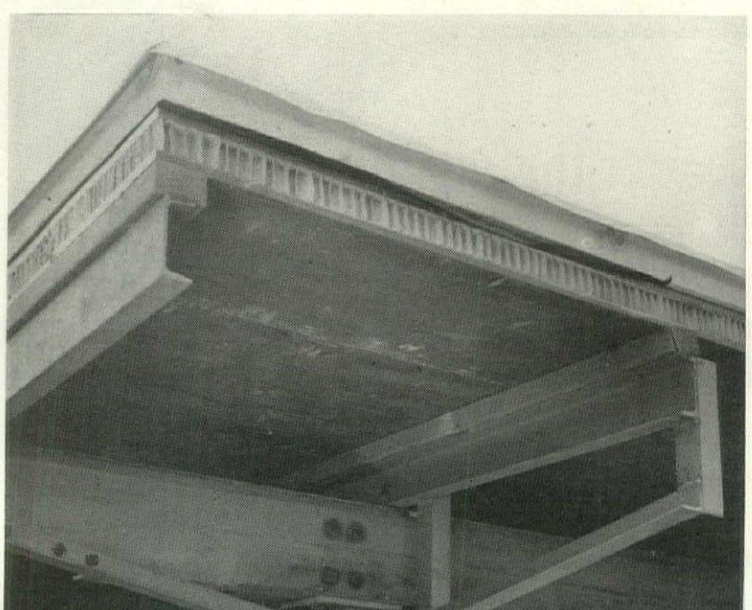
To build a partition, the first 4′ x 8 panel is set between floor and ceiling runners, and the half-stud which comes with the panel is taken out, nailed to the wall and the panel slipped over it. The second section is then put in place next to the first and its removable half-stud nailed to the first's bonded half-stud.





Two men, working with $350 worth of equipment in a small garage, have turned out enough Sico panels for five buildings in New England during the past year.





Standard 2′ x 8′ roof-deck sections come in three thicknesses—1¾″, 2½″ and 3¾″. The planks are reinforced with steel mesh and can be used over 8′ spans in most parts of the country.

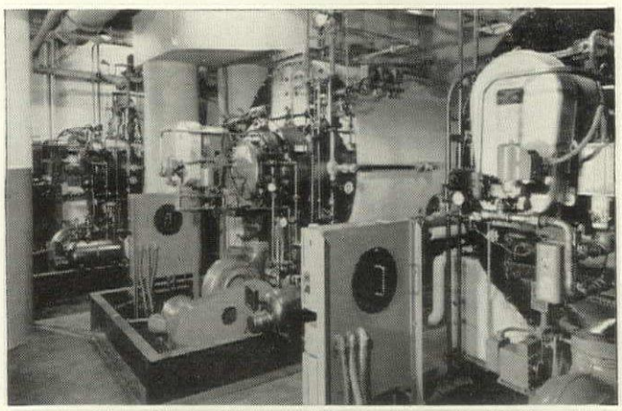


3 Cleaver-Brooks Self-Contained Boilers Supply Steam for Combination Heating System in WASHINGTON POST'S New Building

In this modern newspaper building passersby can see running presses through 11 ft. plate glass windows, located directly behind flag pole in this picture.

WASHINGTON POST BUILDING, Washington, D. C. Albert Kahn Associated Architects and Engineers, Inc. John McShain, Inc. — General Contractor. Standard Engineering Company, Engineers and Contractors.

THE WASHINGTON POST'S new 7-story building is heated by a combination of a hot blast ventilating system for the inside areas and convector radiation along the outside walls. The steam distribution system is divided into two sections, one supplying the fan blast coils at 3 lbs. to 5 lbs. pressure and one supplying the radiation at 3 lbs. to 5 lbs. pressure.



Three Cleaver-Brooks 150 hp., oil-fired, self-contained boilers were easily and quickly installed in low headroom, basement space.

Three Cleaver-Brooks 150 hp. oil-fired, self-contained boilers, installed in the basement location, supply steam for the entire heating system.

Modern Cleaver-Brooks boilers are increasingly specified for heating service. Completely self-contained and compact in design, requiring minimum headroom and floor area, Cleaver-Brooks boilers offer many installation and operating advantages — oil, gas, or combination oil and gas firing — fully automatic — clean — dependable performance — operate at a guaranteed efficiency of 80%. Available in sizes from 15 to 500 hp., 15 to 250 psi.

Write for the latest, fully illustrated Steam Boiler Catalog — Cleaver-Brooks Company, Dept. B, 336 East Keefe Avenue, Milwaukee 12, Wisconsin, U.S.A. *Cable address*: CLEBRO-Milwaukeewis.

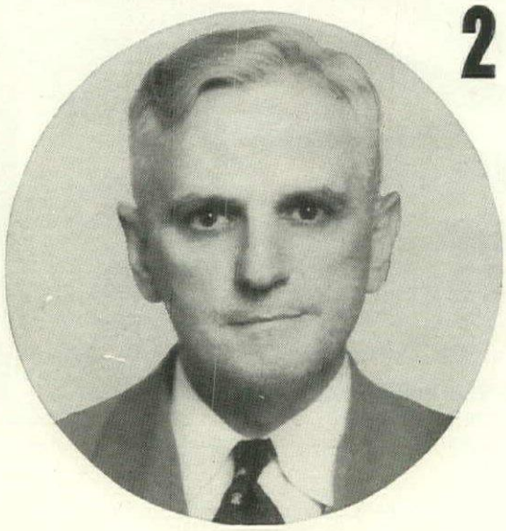
Cleaver-Brooks
Originators of Self-Contained
STEAM BOILERS

Oil and Bitumen Tank-Car Heaters • Distillation Equipment • Oil and Gas-Fired Conversion Burners



1

R. E. FOSKETT
ALBANY HARDWARE & IRON CO.
39-43 State Street, Albany, New York



2

H. M. ADDKISON
ADDKISON HARDWARE CO., INC.
122 East Pearl Street, Jackson, Mississippi



3

SIMON P. FOX
INDUSTRIAL STEEL PRODUCTS CO., INC.
Shreveport, Louisiana

3 GOOD REASONS WH

it pays to call your

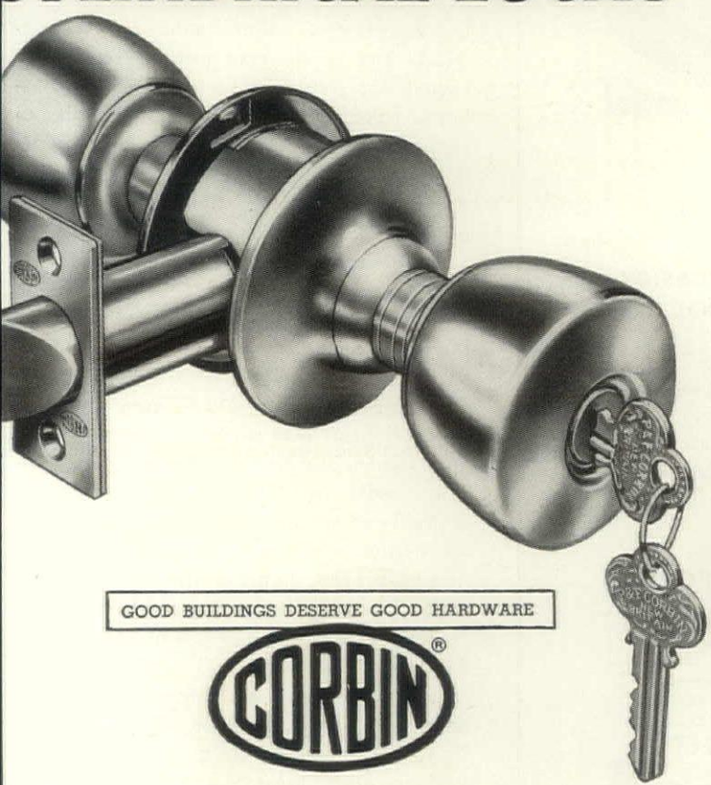
CORBIN

CONSULTANT

The three Corbin consultants pictured on this page have had years of close contact with the hardware and lock problems which confront architects and engineers. They are among the top men in their field. There's a Corbin representative of similar high calibre in your locality who will gladly work with you in the selection of builders' hardware. Put his experience and integrity to work for *you* when plans reach the specification stage.

CORBIN
The World's most widely used BUILDERS' HARDWARE

3 GOOD REASONS WHY it pays to specify CORBIN HEAVY DUTY CYLINDRICAL LOCKS



GOOD BUILDINGS DESERVE GOOD HARDWARE

CORBIN®

P. & F. CORBIN Division
The American Hardware Corporation
New Britain, Connecticut, U. S. A.

1 EXTRA-LONG LATCH BOLT THROW

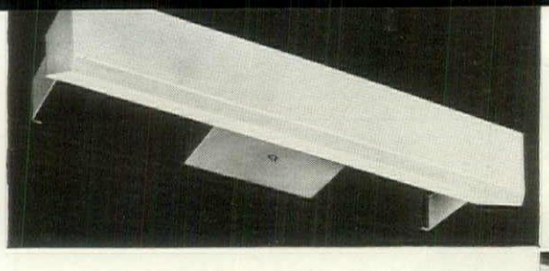
Corbin Heavy Duty Cylindrical Locks offer *all* the features you expect on superior locks *plus* extra-quality advantages such as the full 5/8 inch latch bolt throw. This extra length insures secure locking even on doors that shrink or warp!

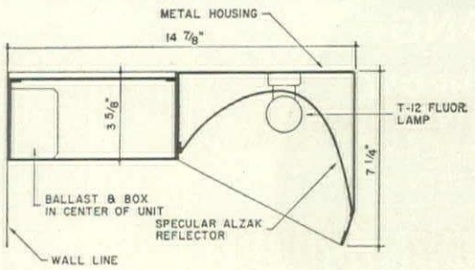
2 WIDE RANGE OF FUNCTIONS

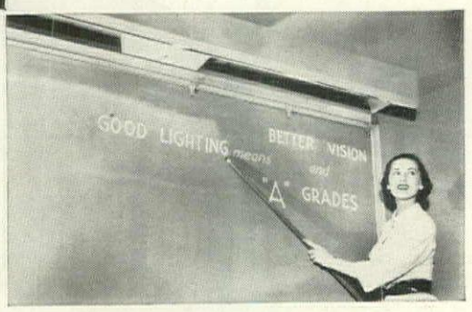
Corbin Heavy Duty Cylindrical Locks are regularly made in 26 *different functions* to meet every possible need in schools, hospitals, apartments, offices, public buildings and fine residences.

3 MOST FLEXIBLE MASTER-KEYING SYSTEM

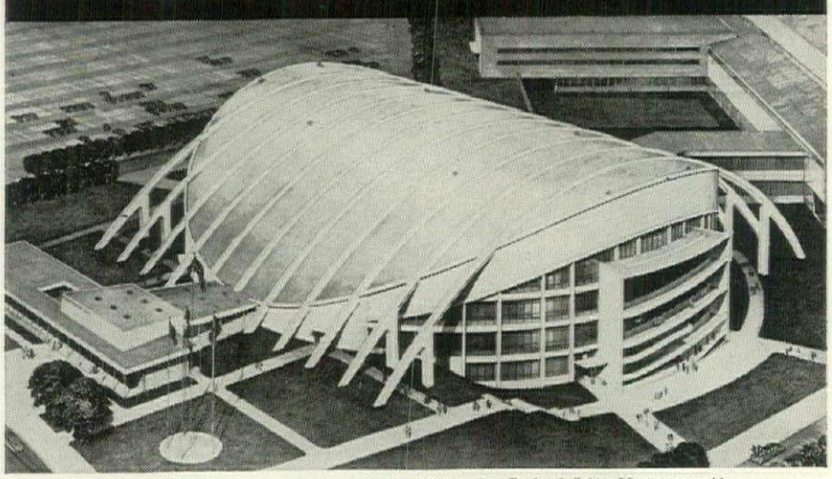
The Corbin master-ring cylinder greatly increases the number of possible key changes. With Corbin Locks, there is absolute certainty that the number of changes required will be satisfactorily supplied.







SEAPORCEL... CROWNING GLORY FOR THE LARGEST INDOOR RODEO ARENA IN AMERICA



GENERAL CONTRACTORS J. A. Jones Construction Co., Atlanta, Ga. Butler & Cobbs, Montgomery, Ala.
ARCHITECTS & ENGINEERS Sherlock, Smith & Adams, Inc. Montgomery, Ala.

THE LIVESTOCK COLOSSEUM

BEING ERECTED BY THE STATE OF ALABAMA BUILDING COMMISSION FOR AGRICULTURAL, INDUSTRIAL, EDUCATIONAL & EXPOSITIONAL USE

This 260 ft. x 130 ft. oval colosseum is crowned by 16,000 sq. ft. of SEAPORCEL (*Leathorcel Finish*) architectural porcelain enameled wall panels. In beautiful soft green, the *Leathorcel* texture harmonizes with the rest of this striking structure. Installed by Seaporcel's own erection crews the porcelain panels are backed by a one inch insulating material for sound insulation.

Here is a *truly* permanent facing material of *lasting* beauty!

FOR SOME JOB...SOMEWHERE...YOU CAN USE SEAPORCEL!

To find out how porcelain enamel can fit into your plans, ask for our local representative to call, or write for Brochure No. 24

Also manufacturers of SEAPORCLAD

SEAPORCEL METALS, INC.
2800 Borden Avenue
Long Island City 1, New York

SEAPORCEL PACIFIC, INC.
1461 Canal Avenue
Long Beach 13, California

complete A. F. of L. Metal Fabricating & Enameling Shop

SEE OUR CATALOG IN SWEET'S 1953

Seaporcel ARCHITECTURAL PORCELAIN ENAMEL

Complete Engineering and Erection Departments • Member: Porcelain Enamel Institute

TROUGH FIXTURE throws light on schoolroom chalk board

To a pupil in the rear of a classroom, the teacher's writing on the chalk board can shrink to classified-ad size type. Adding to his visual distress, general illumination—natural, artificial or both—provides less than half as much light on wall or chalk board surfaces as on his desktop. Where the over-all system does not compensate for this dual disadvantage, the *Solarlite Chalk-board Dean* can serve as a simple, economical supplementary light source. Mounted directly above the chalk board, the fixture utilizes a parabolic polished trough reflector to cast a wide arc of glareless, shadowless light from a single row of fluorescent lamps. Although barely visible to anyone in the room, the intensity on the writing surface—70 foot-candles from top to bottom—is just enough to make reading easier without creating annoying brightness contrasts. The *Dean* sells for about $10.50 per running foot. It consumes only 11 w. for each board foot it illuminates. Figured on a 3¢ kw. rate, yearly operating costs for a 16′ unit used six hours a school day would run about $15.

Manufacturer: Solar Light Mfg. Co., 1357 S. Jefferson St., Chicago 7, Ill.

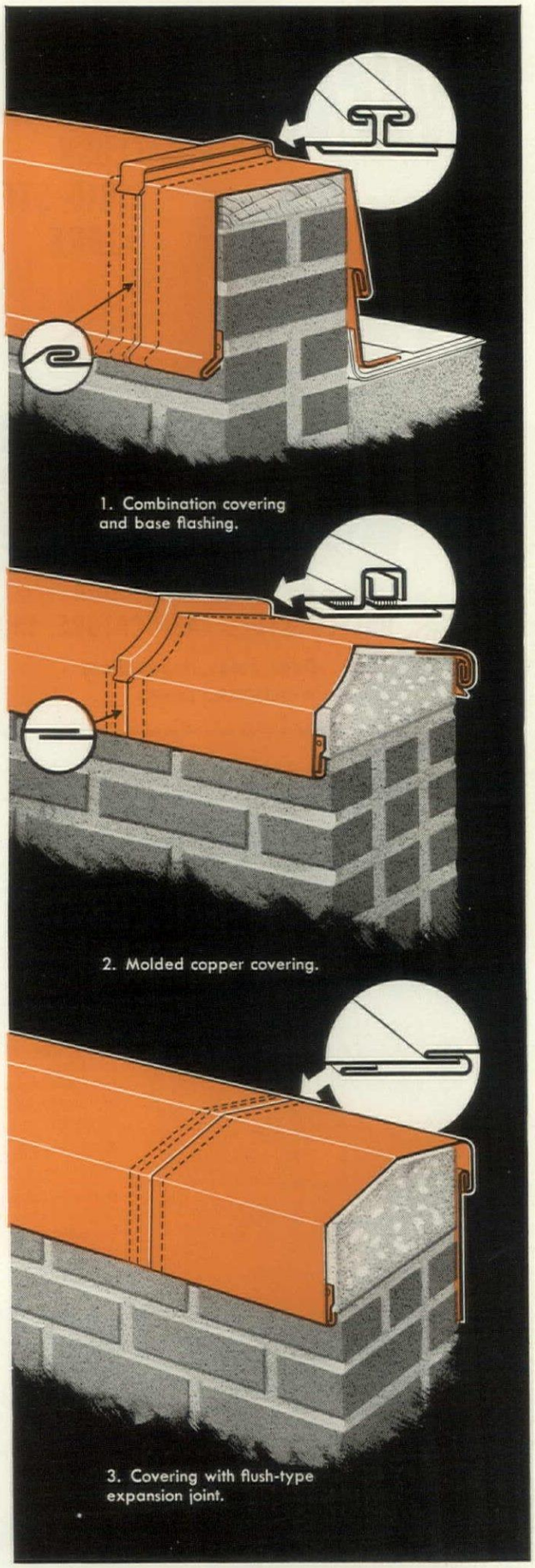
ASBESTOS DUCT for air conditioning costs less, is quieter than metal

Current attempts to utilize labor-saving materials and to conserve metals are reasons enough for giving lightweight *Careyduct* asbestos conduit the twice-over. Unfamiliar to many air-conditioning engineers and specification writers, the duct is nonetheless an economical building material. It has been around for quite a while—14 years in fact—and has seen service in some notable installations, the Pentagon for one. But because of the reluctance of ductwork contractors to offend their sheet-metal men, *Careyduct* is not used as widely as its positive points might suggest. Basically, it is a laminate of smooth pressed asbestos sheets over a core of corrugated asbestos which provides both thermal and acoustical insulation. The latter is especially desirable where the whoosh of high velocity distribution needs hushing.

Careyduct sections are available in more than 60 stock rectangular dimensions from 2½″ x 5½″ up to 23½″ x 23½″, and in 15 round duct sizes from 4″ to 30″ in diameter. All come in 3′ lengths and are easily cut and shaped on the job. Pronged clips, tape and a fire-resistant adhesive are used to connect the sections. Static pressure and velocity characteristics for the various sizes are about the same as for metal. (An accurate conversion table may be obtained from the manufacturer.)

Besides costing about 20% less than metal (installed with accessories *Careyduct* averages

continued on p. 200



How to Prevent Common Coping Troubles

. . . and provide all-weather protection

Penetrating rain and water seepage can cause serious damage to masonry copings. Especially in cold climates, where heaving occurs when water within the masonry freezes and expands.

If this trouble, which may dangerously weaken the parapet construction, is to be avoided, the copings should be covered. This work can be done better with copper and with assurance of long-lasting protection. Use copper of cornice temper (cold rolled) and of suitable gage. For installations of the sizes illustrated, 20-oz. copper is recommended. It is important that edge fastenings be free to slide, and that expansion joints be provided at intervals of not over 24 feet.

5338

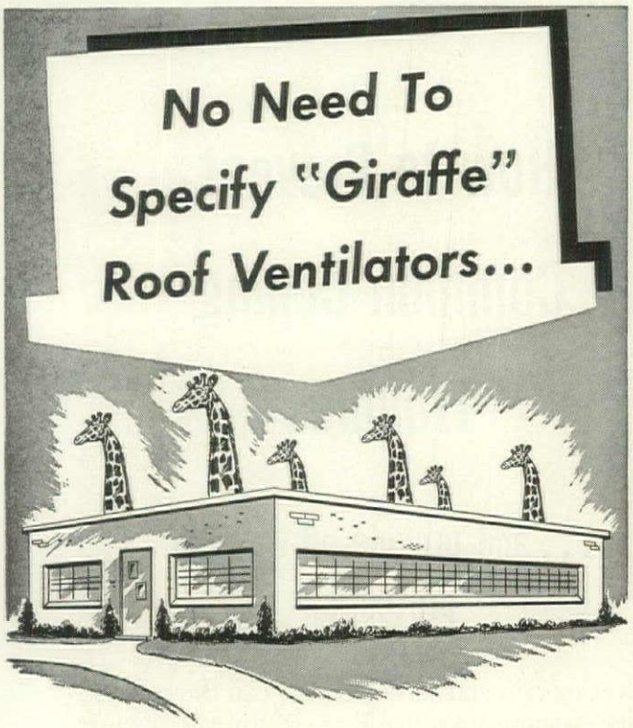


Do you have the FREE Anaconda file of drawings?

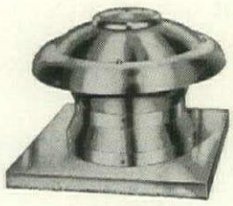
Each drawing shows a new or improved way to apply sheet metal. Each is printed on a separate 8½ in. x 11 in. page, handy for quick-reference filing. This entire series may be obtained absolutely FREE. Write today for Portfolio S to:

The American Brass Company
Waterbury 20, Connecticut
In Canada: Anaconda American Brass Ltd.
New Toronto, Ontario

for better sheet metal work—
USE
ANACONDA®
COPPER



Now That **JENN-AIR** *"Low-Contour"* **IS AVAILABLE!**



Jenn-Air "Low-Contour" Power Roof Exhauster

● Ultramodern in design, Jenn-Air "Low-Contour" Power Roof Exhausters help retain the designer's clean, horizontal lines.

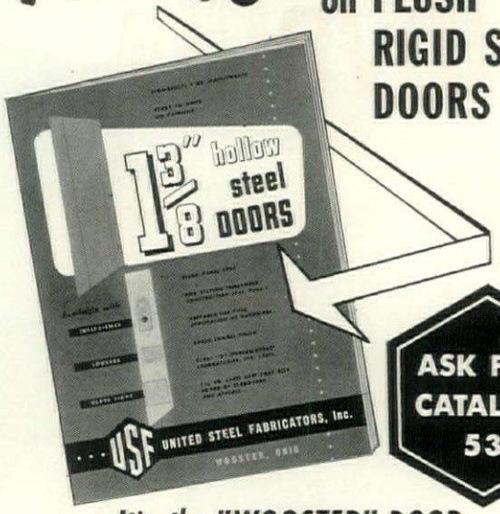
But that's just one reason why more and more top architects are specifying Jenn-Air in their plans. Here are additional Jenn-Air *plus* features:

- Made of heavy gauge, corrosion-resistant aluminum . . . yet light in weight.
- Motor mounted outside of airstream, not subjected to harmful deposits.
- Available in explosion proof and two-speed models.
- Complete in itself, requires no special fittings.

Write for our illustrated brochure for complete specification details.

JENN-AIR PRODUCTS COMPANY
ARCHITECTS & BUILDERS BLDG. • INDIANAPOLIS 4, INDIANA

Write for latest information and design data on **FLUSH RIGID STEEL DOORS**



ASK FOR CATALOG 53

It's the "WOOSTER" DOOR
UNITED STEEL FABRICATORS, INC.
Door Sales Department
WOOSTER, OHIO

COMPLETE LINE OF QUALITY FLUORESCENT AND SLIMLINE FIXTURES FOR EVERY REQUIREMENT... COMMERCIAL & INDUSTRIAL BY

WILEY
Pioneers in Fluorescence Since its Inception

- Modern, functional designs to harmonize with any architectural motif.
- Stock fixtures adaptable for all lighting layouts.
- Units designed for quick, easy erection. A minimum of "on-the-job" assembly.
- Patented E-Z Servicer.
- District Sales Engineers available for prompt cooperation.

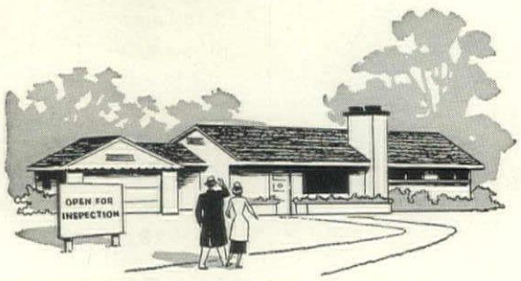
Designed and completely manufactured by WILEY, with ETL Certified Electrical Components

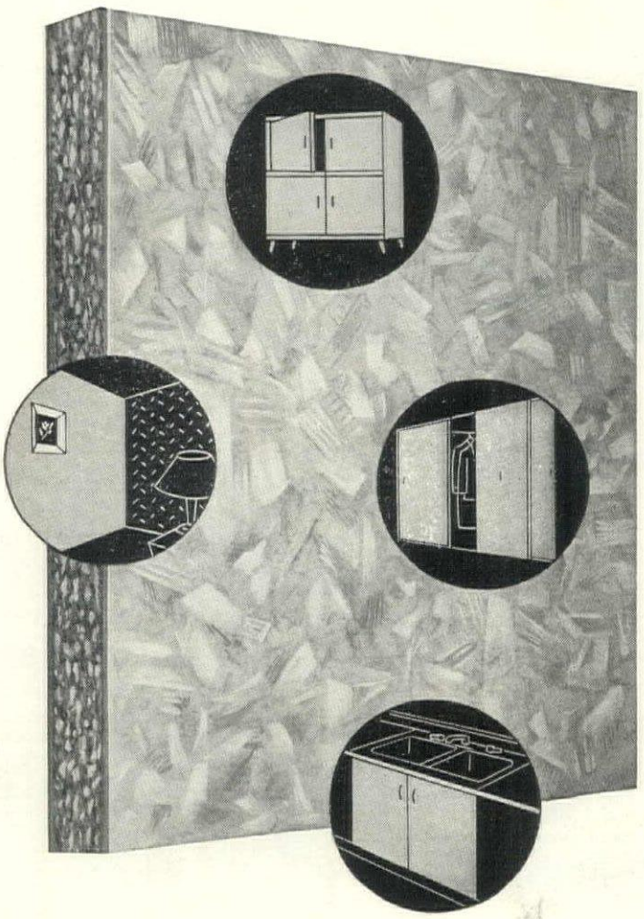
For Full Information, write
R&W WILEY, INC.
Dearborn at Bridge St.
Buffalo 7, N. Y.
Underwriters' Approved
IBEW (A F of L) Label
Fleur-O-Lier Certified Models

Novoply*

WOOD MOSAIC PANEL

reflects the care you put into your homes!





New homes that say, "Open for Inspection" or "For Sale," do not stay on the market very long when beautiful Novoply has been used here and there around the building.

For versatile Novoply is a bit of a magician! It helps to make up an undecided home buyer's mind *in favor of your house.* And it sets off the spark that turns "lookers" into buyers, just like *that!* It reflects the care that has gone into the building of your houses.

So, consider Novoply in these ways:

First, Novoply's mosaic-wood-flake texture provides a *new kind* of beauty in good-looking natural colors; pine and redwood.

It combines a modern freshness with the traditional warmth of wood . . . making it *just* the material for exposed panels, for walls, screens, partitions, built-ins and fine furniture of many types.

Then consider its *flatness!* Novoply is remarkably warp-free, stays *permanently* flat. This makes it the number 1 material for many types of doors – especially sliding doors of closets, cupboards, cabinets and other interior uses.

Also, Novoply makes an ideal base for plastic laminates on counters and table tops.

And perhaps the most *surprising* thing about Novoply is its *low price!* This many-purpose material comes in 4′x8′, 4′x6′, 3′x8′ and a wide range of smaller sizes in ¾″ thickness, also 4′x8′ in ⅜″ thickness. It can be easily worked by ordinary woodworking tools. Can be nailed, sawed, screwed, planed, drilled . . . stained, painted, veneered . . . or left natural.

Novoply is displayed in 60 United States Plywood and U.S.-Mengel Distribution units in principal cities. Or see this amazing material at your lumber dealer. Meanwhile, send the coupon for a free sample.

Made by

UNITED STATES PLYWOOD CORPORATION

World's Largest Plywood Organization

*Trade Mark Registered.
Patented: other patents pending.

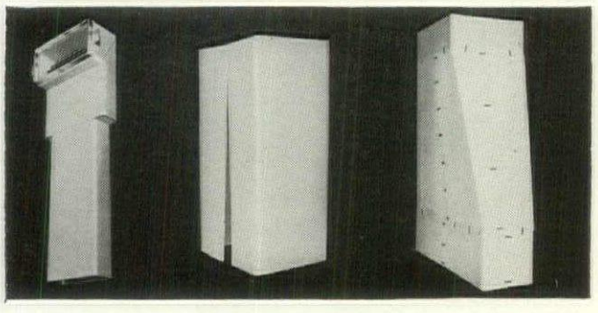
UNITED STATES PLYWOOD CORPORATION
55 West 44th Street, New York 36, N. Y.

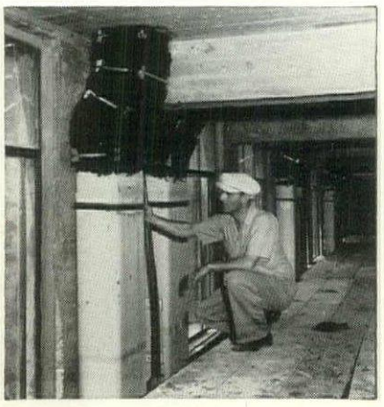
Please send me a free sample of Novoply plus descriptive literature. AF2-53

Name_____

Address_____

City_____ State_____





Made of asbestos, the air-conditioning duct is lightweight, easy to install.



$1.25 per sq. ft.), the asbestos duct boast Underwriters' approval and quick assembly No furring is necessary; the outer shell serve as a base for plaster, paint or other decora tive finish.

Manufacturer: The Philip Carey Manufactur ing Co., Lockland, Cincinnati 15, Ohio.

PLASTIC TUBING: friction-free cover fo prestressing strands in concrete

One tricky problem in the post-tensioning o prestressed concrete is how to prevent concret from adhering to the cables or rods.

Grease is not always adequate protectio and paper and tape coverings take expensiv labor time. Total cost of applying pape around a 7/8" diameter strand runs about 20 per foot. A new plastic cover, *Aeroflex Spli Tubing*, is available which is both leakproo and friction free, and can be applied for abou half as much as paper. Aeroflex comes in 10 lengths in sizes to fit snugly over cable or ro with standard diameters from 3/4" up. The tubing has a 1/2" corrugated overlap which helps keep concrete from seeping in. It is no affected by chemical reaction in setting con crete nor by rain or frost; it may be applied and left in open forms before pouring concrete

Manufacturer: Anchor Plastics Co., Inc., 36-36 36th St., Long Island City 6, N. Y.

continued on p. 204



I. J. Fox, Salon
Jamaica, N. Y.
Architect: Richard M. Bellamy, N. Y. C.



LITECRAFT

makes mink even more glamorous

I. J. Fox, America's largest furriers, realize how the proper light can make a mink — and a customer — glow! The architect of their magnificent new salon knew exactly what lighting would be perfect for the purpose—Litecraft Hi-Lites, Pendant Domelites and Adjust-O-Spots.

That's the great thing about Litecraft. The line is so complete, the fixtures so flexible, you can invariably find precisely the type of lighting that most effectively enhances your design, whether it's commercial or residential. And always with client-pleasing economy. To assist you in specific lighting problems the skilled services of our field engineers are always available.

If *you* have not seen the new Litecraft Fixtures, you are missing the most advanced achievements in the incandescent lighting field.

Send for the current Litecraft Catalogue today — and see why Litecraft has become first choice with architects who demand the best possible lighting.

mail this coupon today!

LITECRAFT

the quality line of superior design

Main Office & Showrooms: 8 East 36th St., New York 16
West Coast: 8336 West 3rd St., Los Angeles 48

*Reg. U. S. Pat. Off.

Litecraft Manufacturing Corporation 21
8 East 36th Street, New York 16, N. Y.
Please send me, without obligation, your illustrated catalogues showing the complete line of LITECRAFT Lighting Fixtures.

Name

Address

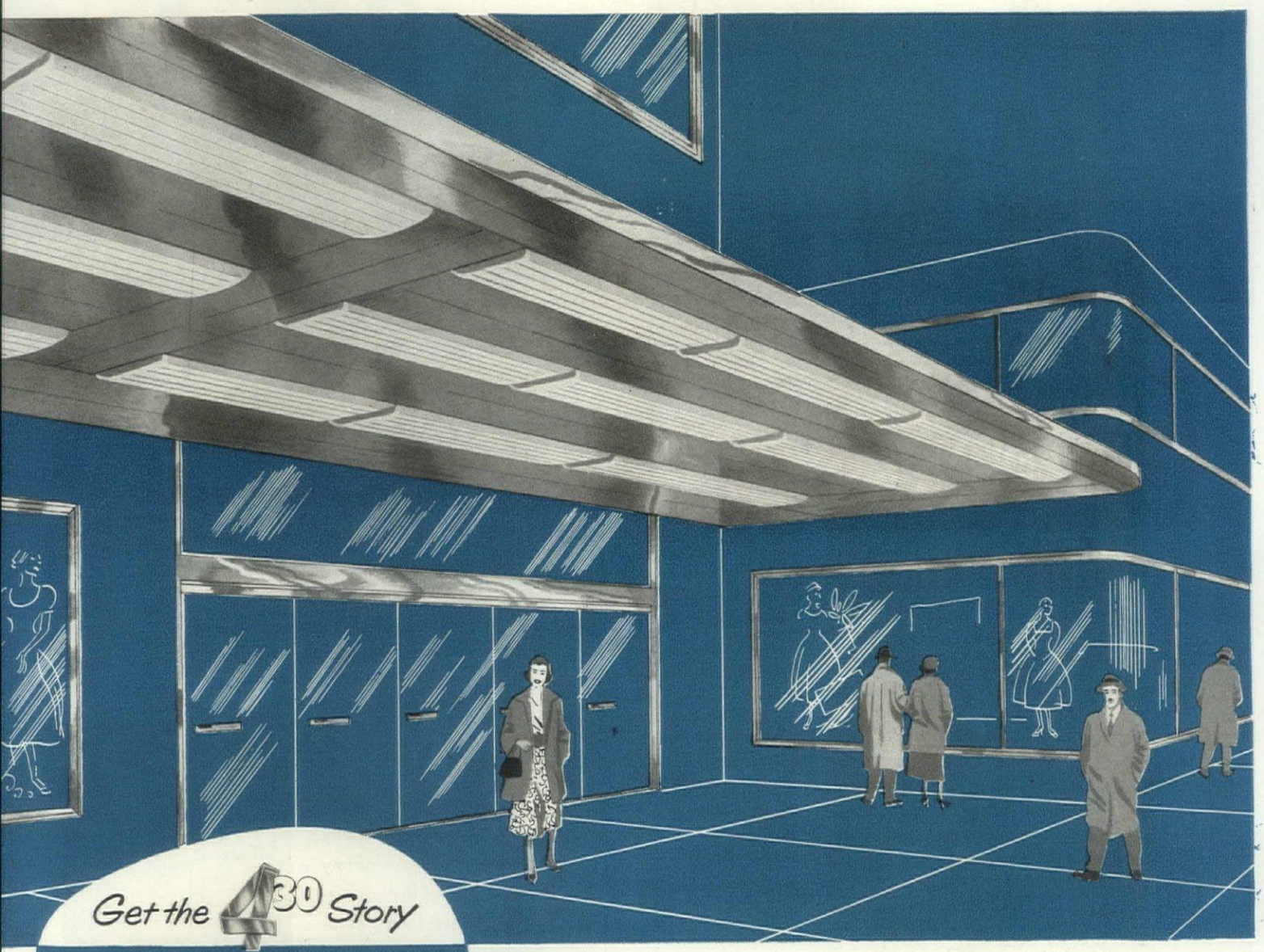
City Zone State

Please check one ☐ Architect ☐ Decorator ☐ Engineer ☐ Builder-Contractor ☐ Home Owner

"It's a **NATURAL** job for stainless"

Putting up a good front is only smart business

Satisfied customers are as important to the architect as to any other businessman. A smart design can backfire if materials fail, maintenance becomes excessive and replacement necessary. The selection of materials is an increasingly important part of the architect's job . . . that's why more and more stainless steel is being used wherever beauty, long wear and low maintenance are essential. Stainless fights rust and corrosion better than any other metal in general use today . . . it blends well with any color or material . . . it resists wear . . . it has the strength to permit the use of light gauges . . . it responds quickly to mild soap and water. No wonder stainless is a *natural* material for storefront construction. Stainless mouldings are available in a great many designs at costs only equalling those of substitute materials. Next time specify stainless . . . your clients will appreciate it.



Get the 430 Story

Sharon has prepared a fact-packed, fully illustrated booklet with up-to-the-minute information about 430 Stainless Steel. To get your free copy contact your nearest Sharon representative or write direct.

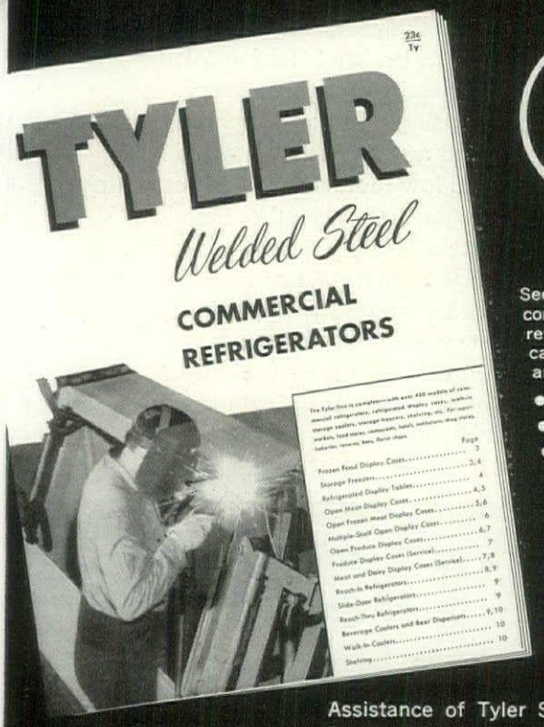
SHARONSTEEL

SHARON STEEL CORPORATION

Sharon, Pennsylvania

DISTRICT SALES OFFICES: CHICAGO, ILL., CINCINNATI, O., CLEVELAND, O., DAYTON, O., DETROIT, MICH., INDIANAPOLIS, IND., MILWAUKEE, WIS., NEW YORK, N. Y., PHILADELPHIA, PENNA., ROCHESTER, N. Y., LOS ANGELES, CALIF., SAN FRANCISCO, CALIF., MONTREAL, QUE., TORONTO, ONT.

Now in SWEET'S CATALOG!



TYLER
Welded Steel
COMMERCIAL REFRIGERATORS

23c / Ty

See catalog of the complete Tyler line of refrigerators, display cases, storage freezers and coolers for:

- supermarkets
- food stores
- restaurants
- hotels
- institutions
- drug stores
- bakeries
- taverns
- bars
- florist shops
- etc.

Assistance of Tyler Store Planning Dept. available to architects! Write:

TYLER FIXTURE CORP., Niles, Michigan

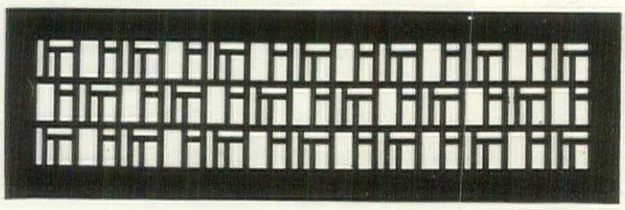
AMERICA'S FINEST FLUORESCENT LIGHTING for every requirement



Send for complete Smithcraft catalog

- Smithcraft AREA ILLUMINATION
- Smithcraft ARCHITECTURAL TROFFERS
- Smithcraft COMMERCIAL FIXTURES
- Smithcraft INDUSTRIAL FIXTURES

Smithcraft LIGHTING DIVISIO
CHELSEA 50, MASS



THIS HENDRICK GRILLE DESIGN IS

Mosaic

A truly distinctive design, obtainable only from Hendrick, the Mosaic is also a very practical one because it has 63% open area for the passage of air.

Over a hundred other standard Hendrick Ornamental Grille designs are available, making it easy to select just the right design to harmonize with the decorative motif of the rooms where grilles are to be installed. Write for full information.

SEE OUR CATALOG IN SWEET'S

Perforated Metals
Perforated Metal Screens
Wedge-Slot Screens
Architectural Grilles
Mitco Open Steel Flooring,
Shur-Site Treads, Armorgrids

HENDRICK
Manufacturing Company
52 DUNDAFF STREET, CARBONDALE, PA.
Sales Offices in Principal Cities

HAWS



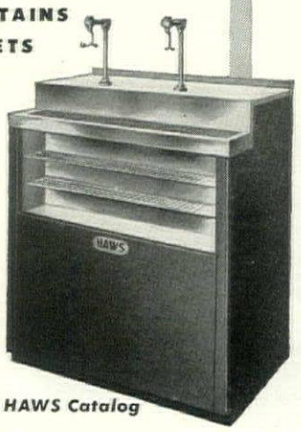
has the ANSWER

...for every specification requiring a public source of refreshing, sanitary drinking water.



RESTAURANT WATER COOLERS
ELECTRIC WATER COOLERS
DRINKING FOUNTAINS
DRINKING FAUCETS

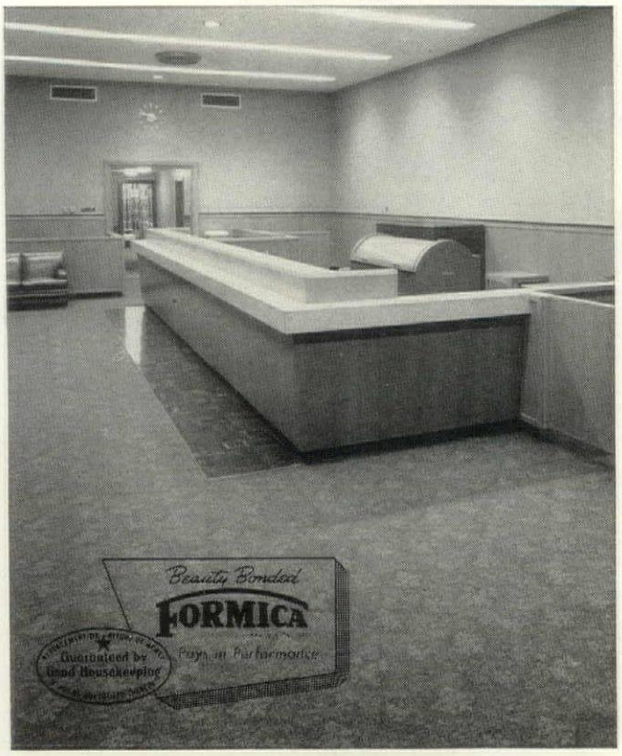




Single and multiple units to fit your requirements. Beauty to match the decor of any design. The utility you demand. Backed by a reputation for reliability since 1909.

See Sweets or write for the new HAWS Catalog

HAWS DRINKING FAUCET CO.
1443 FOURTH STREET · BERKELEY 10, CALIFORNIA



Middletown, Ohio: The American Building and Loan Association is one of the latest financial firms to eliminate traditional "cages" and use open design. Formica on counter tops and fronts is in two-tone effect using light and dark wood grains.
Lorenz and Williams, Architects
Cincinnati Store Fixtures, Formica Fabricator

4631 Spring Grove Ave., Cincinnati, Ohio

---

years of experience make this

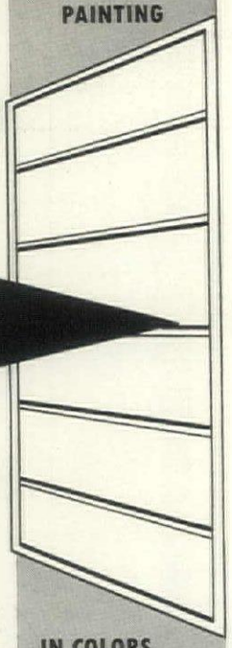
a SAFE SPECIFICATION

PAINT FIRST THEN GLAZE WITH

TREMGLAZE

MASTIC GLAZING COMPOUND

NEEDS NO PAINTING

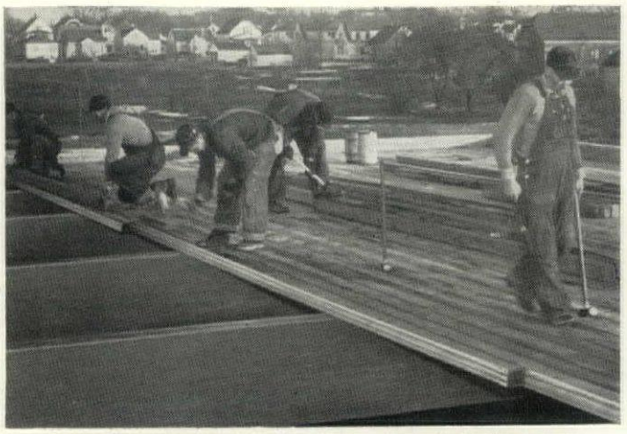


Architects safely specify TREMGLAZE Mastic Glazing Compound because time has proved its ability to withstand weather, steam, fumes and condensation without being painted over. TREMGLAZE speeds up the job, eliminates cost of painting over, saves time and money on clean-up labor. TREMGLAZE meets Aluminum Window Manufacturers Association standards.

CALL THE LOCAL TREMCO MAN OR WRITE

IN COLORS FOR METAL OR WOOD WINDOWS

THE TREMCO MANUFACTURING CO.
CLEVELAND and TORONTO



UNIT DECK

is a simple, economical new method of roof and floor construction

Precision machined of 4" x 5" kiln dried red cedar timber, Unit Deck provides many advantages that lower building costs. Check these features:

UNIT DECK eliminates the need for purlins.

UNIT DECK offers greater spans than most other materials—therefore, less roof supporting members need be used.

UNIT DECK eliminates the need for insulation.

UNIT DECK eliminates the need for roof sheathing.

UNIT DECK is highly fire-resistant.

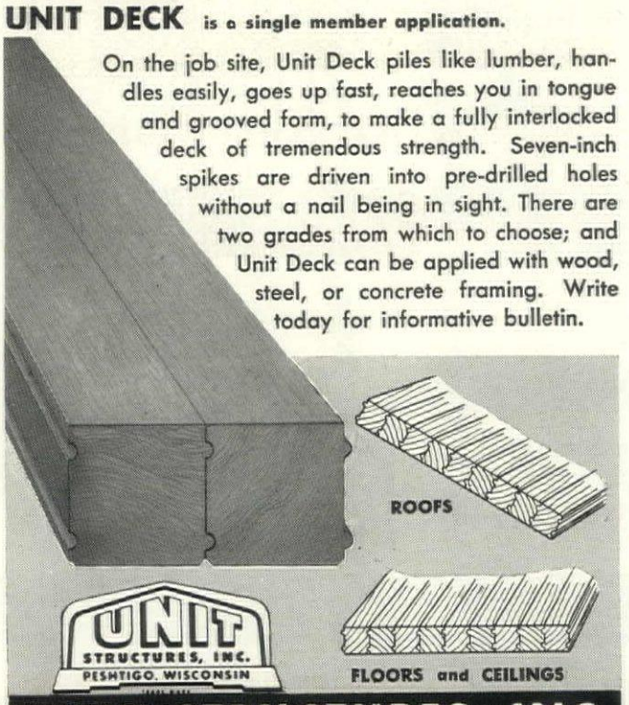
UNIT DECK offers a natural ceiling of finished appearance.

UNIT DECK is economical.

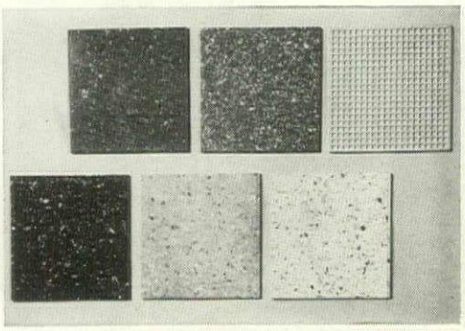
UNIT DECK saves labor.

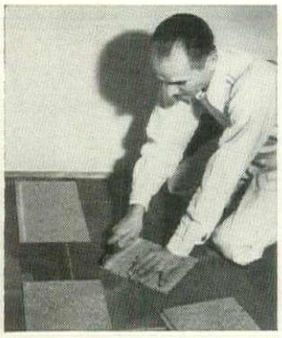
UNIT DECK is a single member application.

On the job site, Unit Deck piles like lumber, handles easily, goes up fast, reaches you in tongue and grooved form, to make a fully interlocked deck of tremendous strength. Seven-inch spikes are driven into pre-drilled holes without a nail being in sight. There are two grades from which to choose; and Unit Deck can be applied with wood, steel, or concrete framing. Write today for informative bulletin.



UNIT STRUCTURES, INC.
600 Peck Avenue **Peshtigo, Wisconsin**





A row of tiles is cut to conform to the wall, and the rest just placed snugly together.



WAFFLE-BACK FLOOR TILE stays put without adhesives

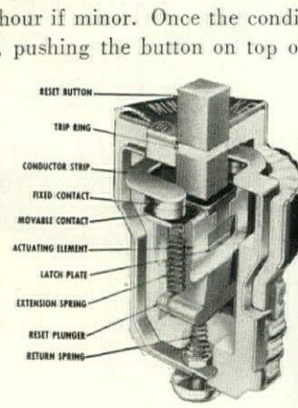
Suitable for use wherever conventional floo coverings are practical and many place where they are not, Robbins new *Terra Til* may be the answer to a multitude of floorin problems. Resistant to grease and alkali, th new vinyl tile is installed directly over con crete or wood subfloor without adhesives o special treatment of the surface. It may eve be laid below grade where excessive mois ture is present. Pockets in its honeycombe back are said to exert a suction effect tha helps hold the tiles in place, prevents mois ture seepage between joints, and traps air fo effective thermal insulation. Twice as thic as regular solid tile, *Terra Tile* has ten time the bounce. The vinyl plastic's dimensiona stability makes the adhesiveless setting pos sible. Slight compression holds the tiles firm ly in place and the finished floor will no bend or buckle. *Terra Tile* is not cheap. Bu at 75¢ per sq. ft. it is worth its weight i vinyl since it needs little maintenance an will serve a lifetime. It is available in 1 attractive color blends.

Manufacturer: Robbins Floor Products, Inc Tuscumbia (Muscle Shoals), Ala.

CIRCUIT BREAKER screws into regular fus box

Many bruising safaris for spare fuses in th dark can be eliminated with the *Mini-Breaker* Fitting any standard fuse-holder delivering up to 125-v. AC service, the compact protective device trips a circuit immediately if the over load is a big one, within two minutes if moder ate, and in an hour if minor. Once the condi tion is cleared, pushing the button on top o





the breaker will re-establish power service *Mini-Breaker* is listed by Underwriters' Lab oratories and produced in 15, 20, and 30 amp ratings. Since it never has to be removed from its socket, there is no danger of too generous a fuse being used on an electric line. Price runs about $1.50 per breaker.

Manufacturer: Mechanical Products, Inc. Jackson, Mich.

Technical Publications p. 208

WRITE FOR OUR "PORTFOLIO OF DESIGNS"
WHICH WILL BE KEPT UP-TO-DATE
FOR YOU WITHOUT CHARGE

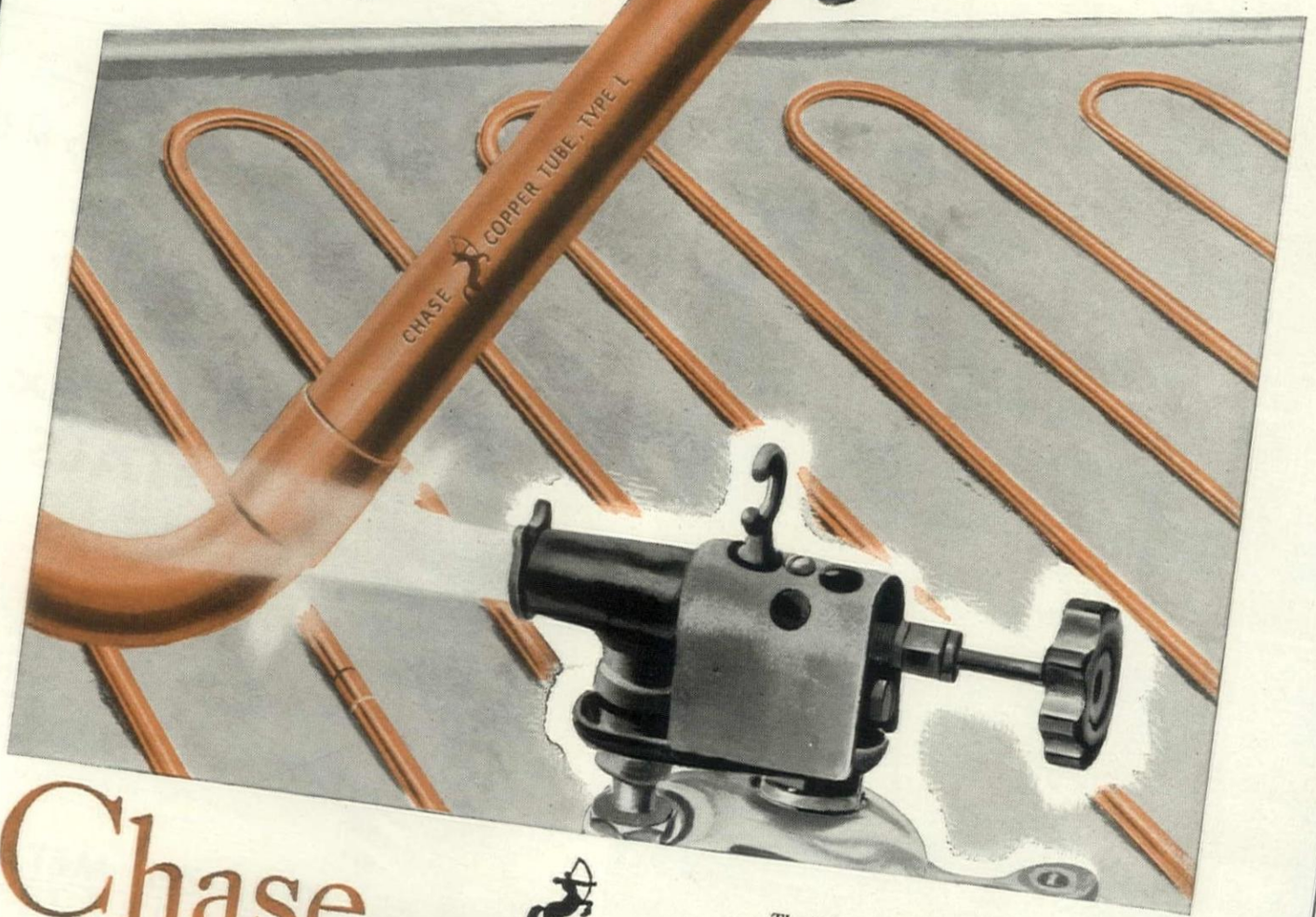
jg

In step with the multiple concepts of modern building and interior design J. G. FURNITURE is available in an unusually varied number of designs in metal as well as wood.

jg furniture company inc. 543 madison ave., new york 22

FOR RADIANT HEATING
choose easy-to-join
CHASE® COPPER TUBE

Architects and builders know that any radiant heating job is better with Chase Copper Tube. And Chase Solder-Joint Fittings make every joint leakproof. Easy-bending Chase Copper Tube comes in long lengths so fewer fittings are required. It's light in weight, corrosion-resistant, ideal for ceiling and wall installations, too. Write for FREE 50-page Radiant Heating Book today.



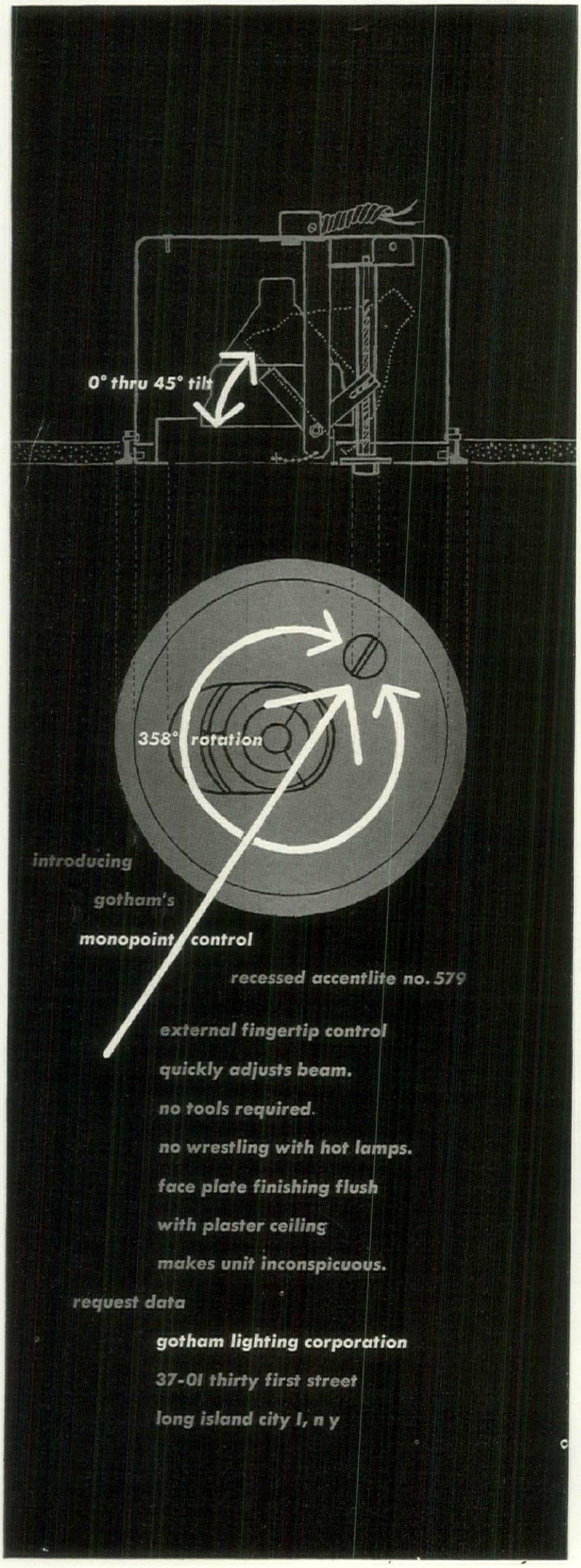
Chase® BRASS & COPPER

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper

Albany† Atlanta Baltimore Boston Chicago Cincinnati Cleveland Dallas Denver† Detroit Houston† Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York Philadelphia Pittsburgh Providence Rochester† St. Louis San Francisco Seattle Waterbury

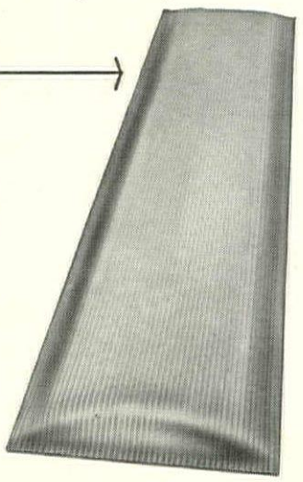
(†sales office only)



For modern interior lighting...

new curved

ALBA-LITE



New curved panels of popular ALBA-LITE glass enhance the clean-lined lighting of modern interiors. Their long lengths minimize the number of visible joints in continuous runs—give rooms smooth new styling.

The soft opal glass in these new panels diffuses light evenly throughout the room, providing fixtures with controlled brightness and a pleasing appearance.

Made with open and closed ends pieces in lengths up to 48″, they are adaptable to standard fixture construction of both the hinged door frame and continuous open trough types. Unlike other materials, ALBA-LITE will not sag, warp, discolor or scratch.

Curved ALBA-LITE panels are available through all leading fixture manufacturers. ALBA-LITE is also available in 3 standard patterns in flat sizes up to 24″ x 100″, or bent to your particular specifications. Send for Bulletin LS-32 and Photometric Data.

CORNING GLASS WORKS, CORNING, N. Y.

Corning means research in Glass

PYREX



that keeps cars on the RIGHT TRACK in parking garages

RIGID-tex METALS

• traction for tired tires on parking garage ramps, scuff and bumper guards to take the kick out of busy bumpers or slamming doors, reflectors to catch the gleam of headlights in dark corners . . . these are only a few of the many ways in which Rigid-tex Metals can help put strength, utility and beauty into your architectural plans. whether you're designing parking garages or pagodas, your imagination will soar with an investigation of Rigid-tex Metals.

send for your Architectural Imagineering Folder — on company letterheads, please.

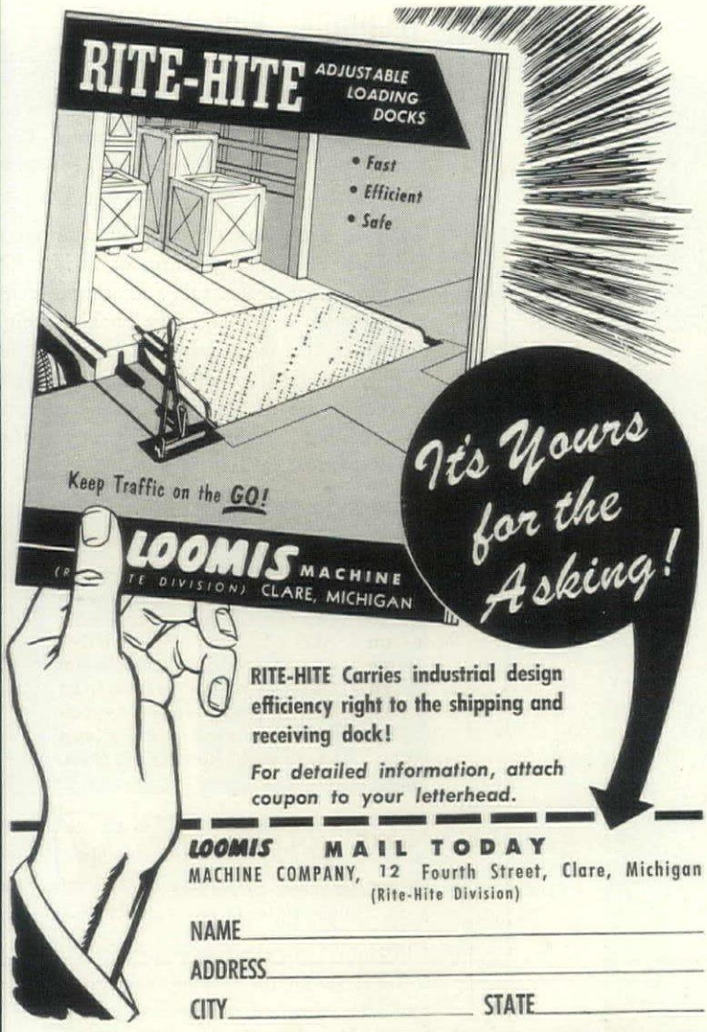
RIGID-tex METALS

RIGIDIZED METALS CORPORATION

7312 OHIO STREET BUFFALO 3, N. Y.

U. S. & Fore Patents

50 Warehouses and Sales Representatives in All Principal Cities Throughout the U. S. and Canada



RITE-HITE Carries industrial design efficiency right to the shipping and receiving dock!

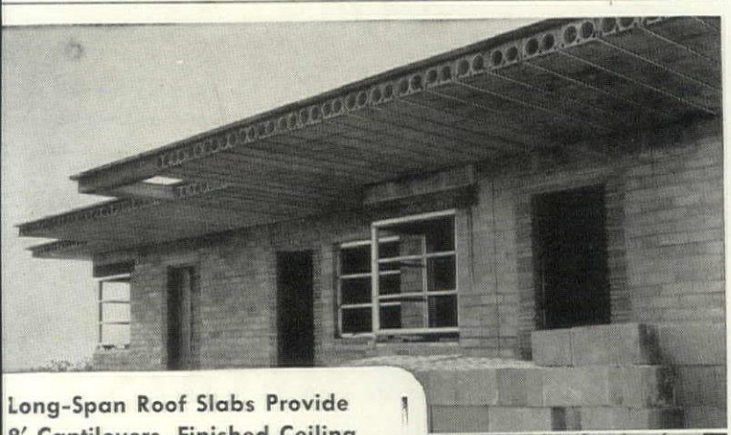
For detailed information, attach coupon to your letterhead.

LOOMIS MAIL TODAY
MACHINE COMPANY, 12 Fourth Street, Clare, Michigan
(Rite-Hite Division)

NAME_____

ADDRESS_____

CITY_____ STATE_____



Long-Span Roof Slabs Provide 8′ Cantilevers, Finished Ceiling

This $175,000 Florida motel eliminated ceiling plaster, achieved 8′ clear cantilevers easily and speeded construction by using Flexicore precast slabs in 16′ to 22′ 6″ spans. Smooth underside of fire-resistant slabs formed attractive panelled ceilings. For catalog and nearest manufacturer, write The Flexicore Company, Inc., 1761 East Monument Avenue, Dayton 1, Ohio.

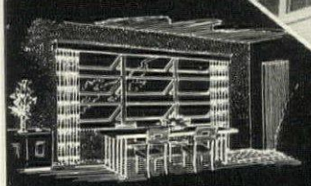


Catalog in Sweet's Architectural

flexicore® PRECAST CONCRETE FLOOR & ROOF SYSTEMS

Take advantage
of our free
ENGINEERING SERVICE
to help simplify your window specifications when planning

SCHOOLS
HOSPITALS
COMMERCIAL
RESIDENTIAL
CONSTRUCTION



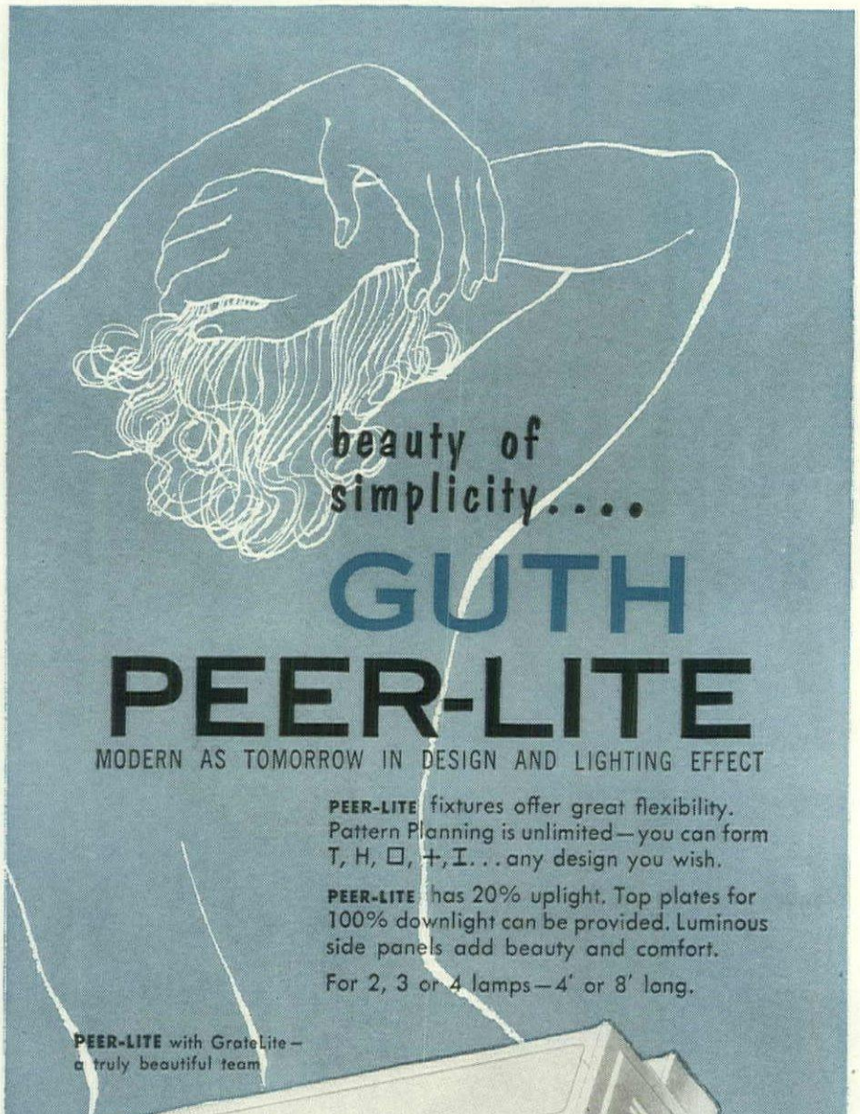
You are, of course, familiar with GATE CITY Awning Window proven performance, effective climate control and design harmony. However, did you know that our forty years of experience in window engineering is available to you for the asking? Write us concerning your next job and we will be glad to serve you.

Gate City PERMA-TREATED FOR LONG LIFE
WOOD AWNING WINDOWS

Refer to SWEET'S FILE 17c-Ga

Member of the Producers' Council, Inc.

GATE CITY SASH & DOOR CO.
"Wood Window Craftsmen Since 1910"
P.O. BOX 901, FORT LAUDERDALE, FLORIDA



GUTH

PEER-LITE

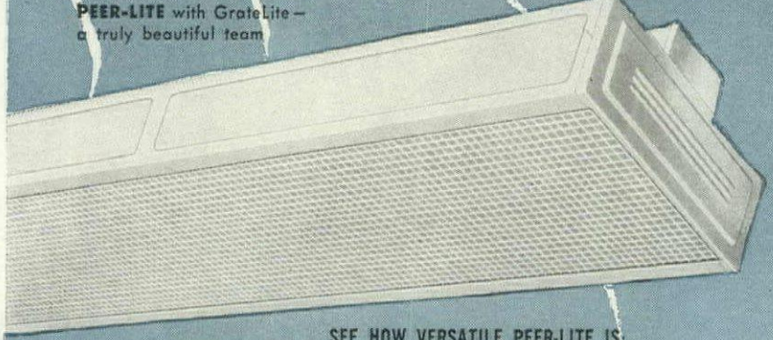
MODERN AS TOMORROW IN DESIGN AND LIGHTING EFFECT

PEER-LITE fixtures offer great flexibility. Pattern Planning is unlimited—you can form T, H, □, +, I. . . any design you wish.

PEER-LITE has 20% uplight. Top plates for 100% downlight can be provided. Luminous side panels add beauty and comfort.

For 2, 3 or 4 lamps—4′ or 8′ long.

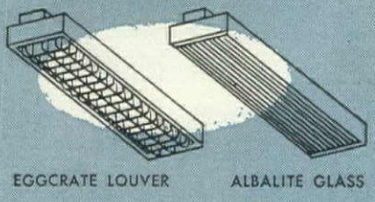
PEER-LITE with GrateLite—a truly beautiful team



SEE HOW VERSATILE PEER-LITE IS:

Any louver or glass diffuser you may wish can be supplied: GrateLite*, eggcrate, Albalite, Flutex, Optilux, also prismatic lens bottoms.

*U. S. & Can. Pats. Pend. Trademark Registered



EGGCRATE LOUVER ALBALITE GLASS

LEADERS IN LIGHTING

Guth

..... SINCE 1902

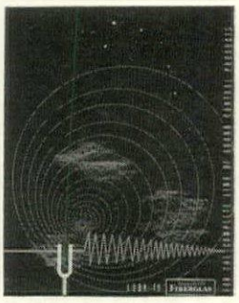
May we send you our folder 900-K?

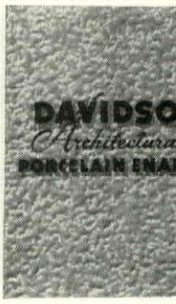
THE EDWIN F. GUTH CO. • ST. LOUIS 3, MISSOURI

TECHNICAL PUBLICATIONS

ACOUSTICAL MATERIALS. Sound Cor
Products. Look to Fiberglas. Owens-Cor
Fiberglas Corp., Toledo 1, Ohio. 44 pp. 8½″ x

Look to Fiberglas contains installation finished application pictures of various ki of *Fiberglas* acoustical and sound con products in use. The other booklet inclu technical data on noise reduction coefficie application details, and specifications for tured, perforated and plastic-faced acoust tile; ceiling board; baffles; and preform insulation and insulating wool.





PORCELAIN ENAMEL STEEL. Davidson Ar
tectural Porcelain Enamel. Davidson Ena
Products Inc., Architectural Division, D
P-53, Lima, Ohio. 12 pp. 8½″ x 11″

Illustrates typical construction details of ar tectural porcelain enamel, and shows bef and after views of remodeling jobs as well photos of new buildings utilizing the dural colorful building material.

X-RAY FACILITIES. Planning the X-Ray P cessing Facilities and Equipment. Medical X-R Sales Div., Eastman Kodak Co., 343 State S Rochester 4, N. Y. 88 pp. 8″ x 10½″

A comprehensive survey of data on X-r processing facilities. Among subjects covere general layout, light-tight entrances, wiri ventilation and temperature control.

TOOLS. Portable Cutting Tools, Catalogue N 252. Manco Mfg. Co., Bradley, Ill. 4 pp. 8½″ x

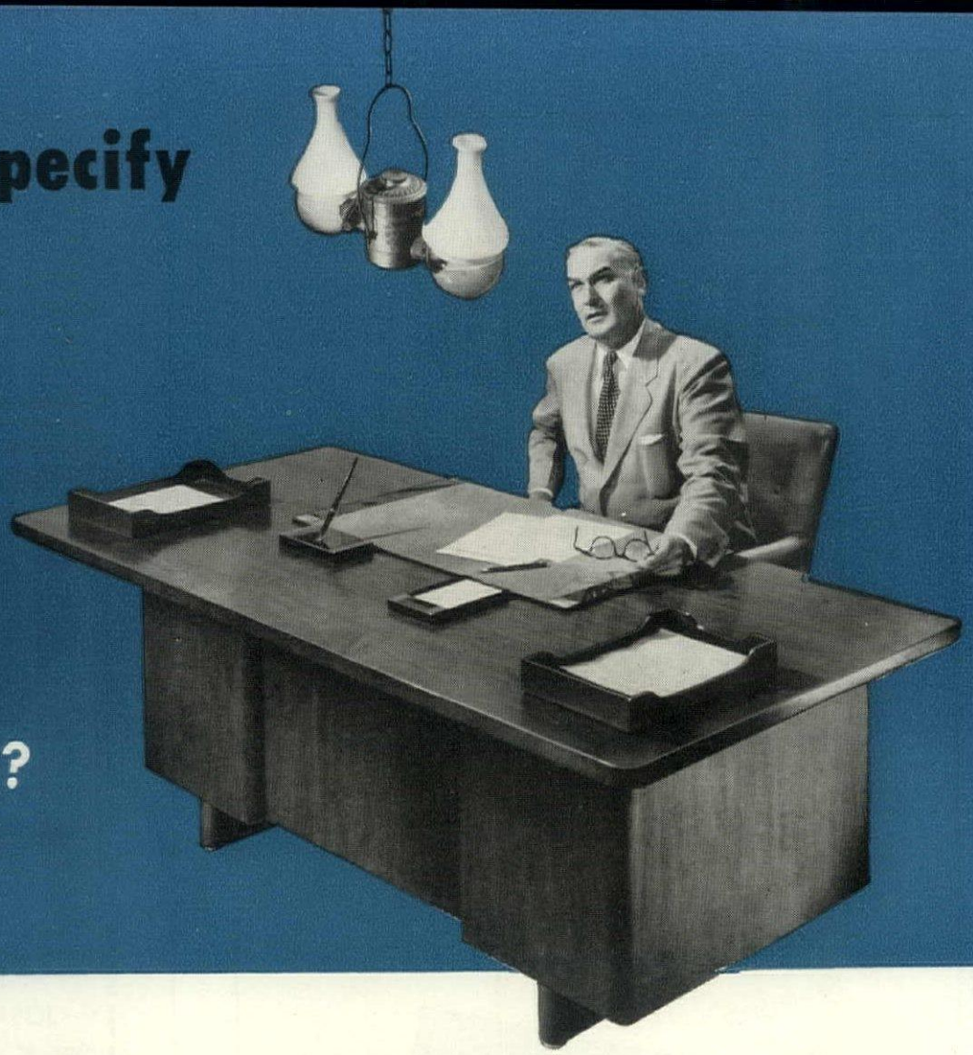
Lightweight hand cutters and high-streng bolt cutters for steel rod, wire and strappi

LIGHTING. American Standard Practice Industrial Lighting, A11.1-1952. American Sta dards Assn., 70 E. 45th St., New York 17, N. 40 pp. 8½″ x 11″. 50¢

A revision of the 1942 *American Reco mended Practice of Industrial Lighting*, th new standard reflects a decade of progress lighting concepts as well as techniques. lighting recommendations are based on an lyses of individual seeing tasks and enviro ments. Lighting quality and quantity are di cussed, and topics such as daylightin maintenance, supplementary lighting ar lighting systems are covered in detail. Tabl itemize values of illumination and lighting r quirements for specific industrial visual task

continued on p. 2

You wouldn't specify this lighting today



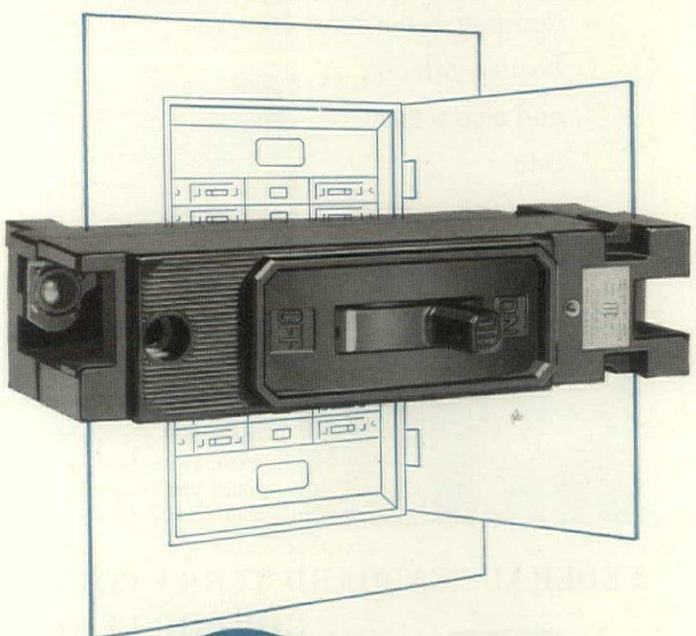
Why specify outmoded circuit protection?

You wouldn't select an antiquated oil lamp to light a modern office. The same should apply to circuit protection.

Many electrical devices are said to provide *adequate* safety. But anything short of the complete security afforded by circuit breakers can't be called adequate.

Remember—only circuit breakers assure: (1) positive electrical protection, *and* (2) swift restoration of service. And only I-T-E breakers embody those important *extra* features necessary to safeguard modern installations.

So next time you specify the equipment to guard vital lighting, power, and distribution networks, write: "I-T-E Molded Case Circuit Breakers—for all ratings from 10 to 600 amperes, up to 600 volts a-c, 250 volts d-c." Then you'll know you have the finest in modern circuit protection.



I-T-E Molded Case Circuit Breakers

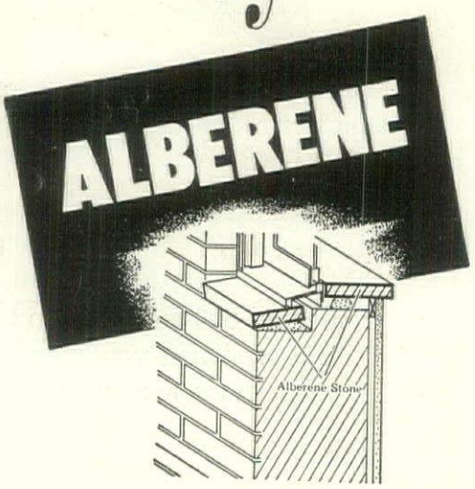
provide not one, not some, but *all* these important advantages:

- **First cost the last—nothing to replace or repair.**
- **Safety for personnel—no live parts exposed.**
- **Quick restoration of service. 3-position operating handle clearly and unmistakably indicates TRIPPED (upon short circuit or overload)—as well as ON and OFF.**
- **All breakers accurately calibrated and sealed (to prevent tampering) in sturdy, heavy-duty molded cases.**

Specify I-T-E **MOLDED CASE CIRCUIT BREAKERS**

I-T-E CIRCUIT BREAKER CO., 19th and HAMILTON STS., PHILADELPHIA 30, PA.

window sills and stools by



- They never chip, scale, or split.
- They're free of maintenance costs — for all time.

That's why the sills and spandrels of the new veterans' hospitals in Albany and Buffalo are of *Alberene Serpentine* . . . and the window stools in these buildings, as well as the new Buffalo State Hospital, are of *Regular Grade Alberene Stone* — all stone from the Alberene Quarries. Write today for complete data and samples to —

ALBERENE STONE CORP. OF VIRGINIA
419—4th Ave., New York 16, N. Y.

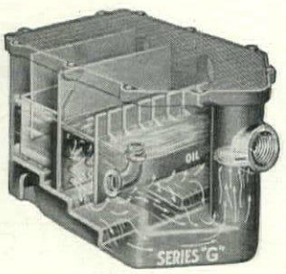
Josam **PLUMBING DRAINAGE PRODUCTS** for

GARAGES

In the Josam Plumbing Drainage line are products designed specifically for use in all types of garages . . . products that provide quality and performance . . . tested and proven in thousands of installations. Shown below are three of the many Josam products especially suited to handle garage drainage requirements.



Series No. 6800
GARAGE FLOOR DRAINS



Series No. GA
OIL INTERCEPTORS



Series No. 0310-5
RAMP DRAINS

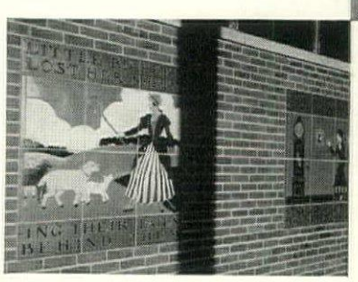
FOR MORE INFORMATION WRITE FOR FREE LITERATURE TODAY

JOSAM MANUFACTURING COMPANY
Dept. AF — MICHIGAN CITY, INDIANA

Polychrome terra cotta panels and statues enable you to design greater beauty, interest and character into modern structures.



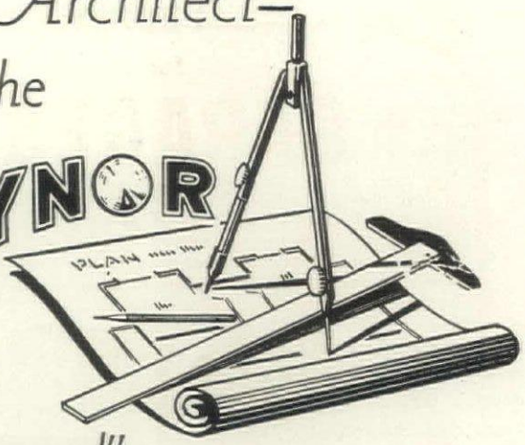




Construction detail, data, color samples, advice on preliminary sketches, will be furnished promptly without charge. Send your inquiry today to Dept. F.

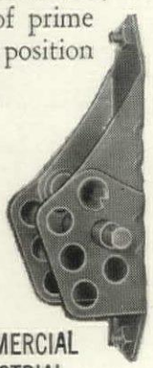
FEDERAL SEABOARD TERRA COTTA CORPORATION
10 East 40th Street, New York 16, N. Y.
Plants at Perth Amboy & So. Amboy, N. J.

Mr Architect—
Meet the
RAYNOR



"Universal"
Graduated Hinge
STANDARD ON ALL DOORS

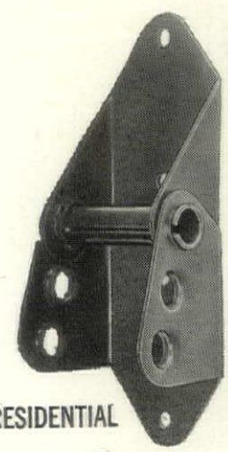
Raynor Manufacturing Company is proud to introduce you of the architectural profession to the Raynor "Universal" Graduated Hinge. It is of prime importance that you people in the vital position of specifying products that will produce the best job at a reasonable cost, understand how completely the Graduated Hinge fulfills the specifications of the perfect hinge.



COMMERCIAL
INDUSTRIAL

Eliminates the Use of a Special Set of Hinges

By merely inserting the track roller in the proper hole, the Raynor "Universal" Graduated Hinge may be used on any section of the door. Used with a tapered track, this amazing hinge automatically seals the door against the jamb or molding when in the completely closed position and automatically breaks the seal for a free-easy rolling door the instant the upward action is started.



RESIDENTIAL

Simple and foolproof, the workmanship and ingenuity of the Raynor Graduated Hinge is typical of Raynor quality—*assurance to every architect that the Raynor complete line of wood sectional overhead doors may be specified with confidence.*

For added built-in beauty see the Raynor exclusive Carved Raised Panel Door
—Write for Free Colored Literature.

SEE OUR CATALOG IN SWEETS

RAYNOR DOOR

RAYNOR MFG. CO.
Dept. B, DIXON, ILL.

FOR THE BEST CONCRETE, USE TOUGH

SISALKRAFT



PROVED
THE BEST PRODUCT
FOR CURING & PROTECTION
—ON THOUSANDS OF JOBS!

Sisalkraft can be applied fast, requires no special equipment, is low in cost—and produces absolutely the best results! At the same time, rugged, waterproof Sisalkraft protects floors from debris, construction stains, and marring.

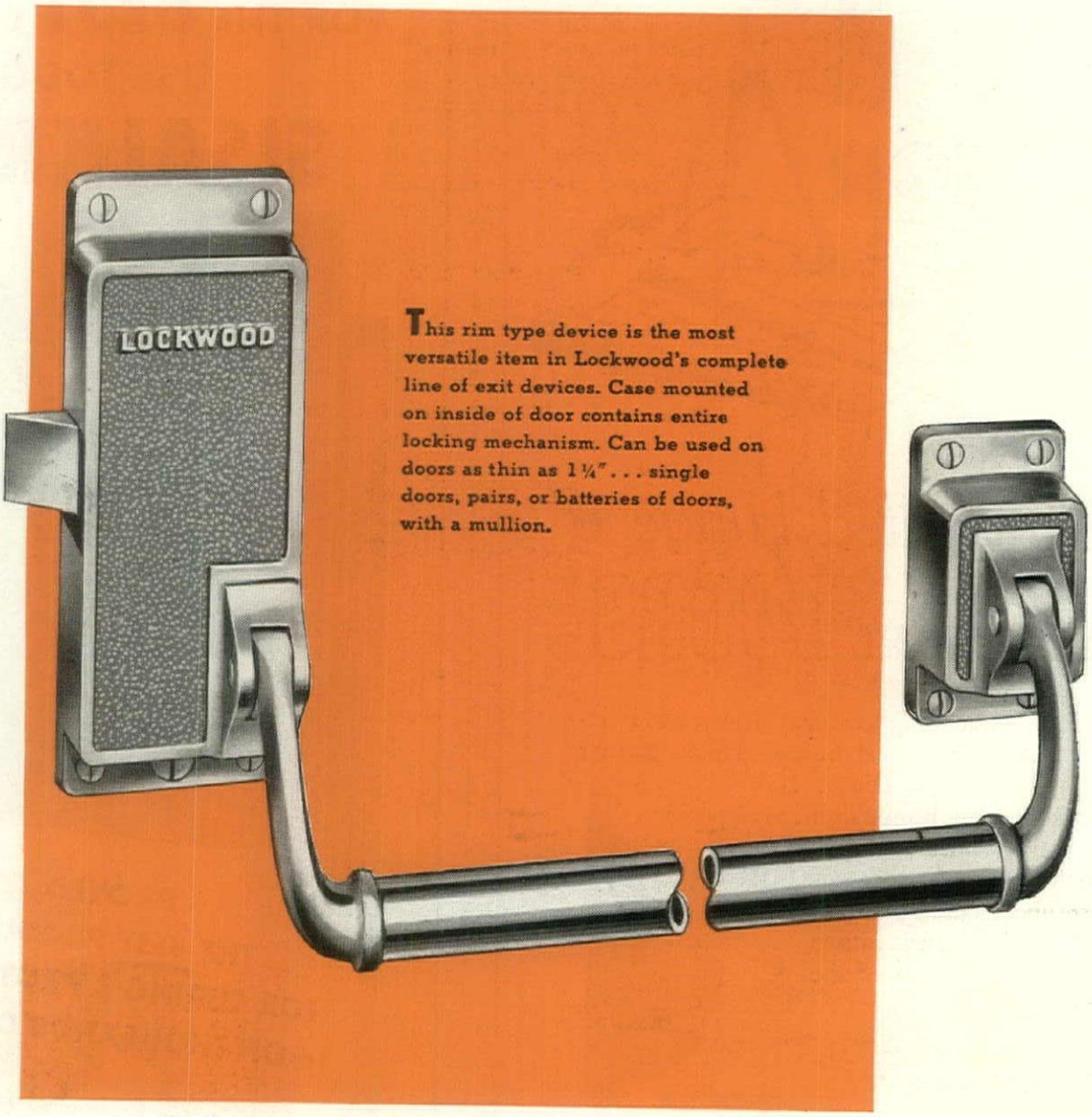
And use Sisalkraft over fill to waterproof slabs on ground.

Available in rolls 3 to 8 feet wide and blankets in any width up to 26½ feet.

Write for samples, information and location of nearest Sisalkraft Dealer.

SISALKRAFT
WATERPROOF
REENFORCED
PROTECTIVE PAPERS

THE SISALKRAFT CO.
Chicago 6, Ill.
New York 17, N. Y. • San Francisco 5, Calif.



This rim type device is the most versatile item in Lockwood's complete line of exit devices. Case mounted on inside of door contains entire locking mechanism. Can be used on doors as thin as 1¼"... single doors, pairs, or batteries of doors, with a mullion.

Safe exit assured by LOCKWOOD

As a leader in the development and manufacture of builder's hardware for the nation's outstanding buildings, Lockwood has an unequalled reputation for quality and dependability.

Lockwood engineers have put all their experience into perfecting the smoothest-working Panic Exit Devices possible.

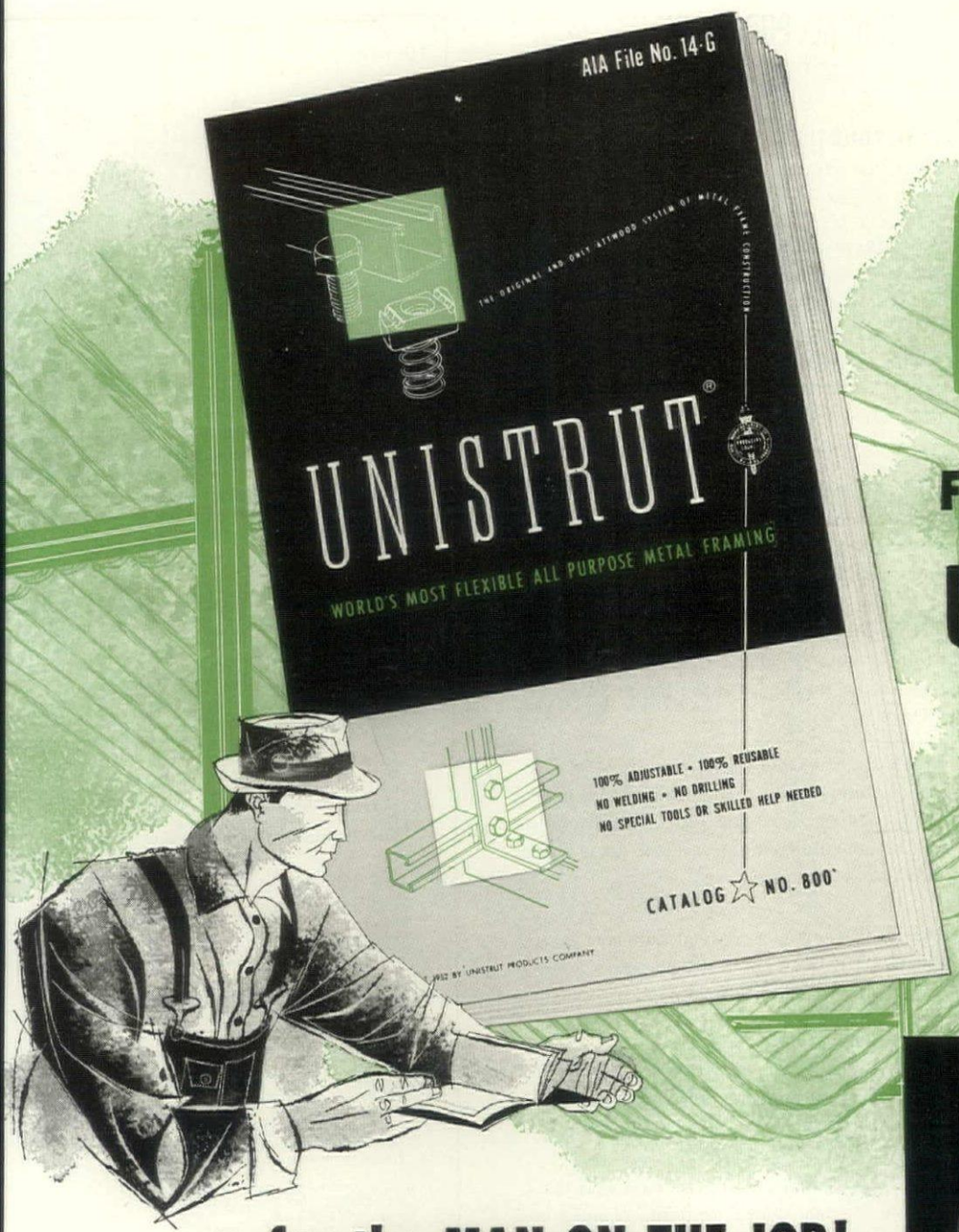
The result: A *complete line* including vertical, mortise and rim type locks. For full details, see Section 17e/LO in Sweet's 1953 Architectural File or consult your Lockwood contract dealer.

see our CATALOG in SWEET'S FILE ARCHITECTURAL

GOLDEN ANNIVERSARY CERTIFICATE

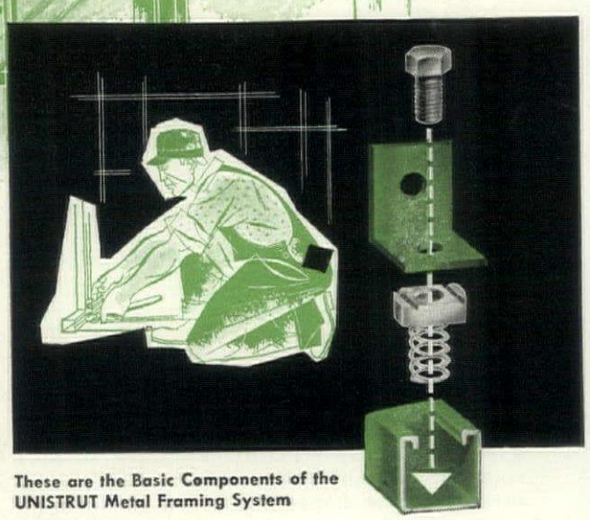
Lockwood

LOCKWOOD HARDWARE MANUFACTURING COMPANY
Fitchburg, Mass.



New

FREE 84 PAGE UNISTRUT® Pocket Catalog NO. 800



These are the Basic Components of the UNISTRUT Metal Framing System

for the MAN ON THE JOB!

84 pages crammed with ideas, pictures and data on how to frame, hang, support and mount all kinds of mechanical and electrical equipment with adjustable UNISTRUT All-purpose Metal Framing.

Perfect for the man on the job—most useful, too, as a handy reference catalog for the architect, engineer, draftsman, contractor, or builder. Just pocket size, easy to handle, always within reach when you want it. Order your free copy of the *NEW* UNISTRUT Catalog No. 800 today! With UNISTRUT channel and fittings you can build all types of conduit, cable, pipe and tubing hangers and supports, framing, mounts, racks, tables, benches, and many other structures with just a hacksaw and a wrench. No drilling, no welding, 100% adjustable and re-usable.

The UNISTRUT system of mechanical supports provides great strength without bulk. It's easy to work with, lasts indefinitely, and the finished structure assures neat and orderly appearance.

UNISTRUT Products are Bonderized

U. S. Patent Numbers: 2327587 2329815 2345650 2363382 2380379 2405631 2541908 Other Patents Pending

The World's Most UNISTRUT **Flexible All-Purpose Metal Framing**

Distributors and Warehouse Stocks in Principal Cities—Consult your Telephone Directories

Write for your copy today! FREE

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.
Chicago 7, Illinois Dept. F 2

Please send me a copy of the new UNISTRUT Pocket Catalog No. 800, without obligation.

Name_____

Company_____

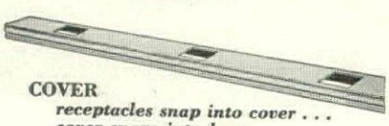
Address_____

City_____ Zone____ State_____

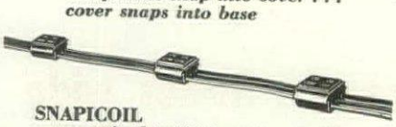
FASTER TO INSTALL

PLUGMOLD 2000 with SNAPICOIL by WIREMOLD

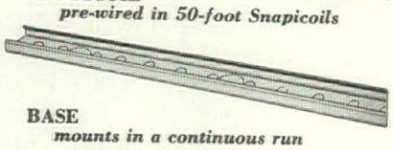
TIME-SAVING FEATURES



COVER
receptacles snap into cover . . . cover snaps into base



SNAPICOIL
pre-wired in 50-foot Snapicoils



BASE
mounts in a continuous run

Installing multiple convenience outlets is a real "snap" with Plugmold 2000 and Snapicoil! You *snap* the receptacles into the cover and *snap* the cover into the base—a few simple snap-over fittings complete the job! Takes minutes instead of hours.

Write today for new, free Plugmold 2000 book!

PLUGMOLD 2000



WIREMOLD'S *New* multi-outlet system

THE WIREMOLD COMPANY
Hartford 10, Connecticut

TECHNICAL PUBLICATIONS

CONSTRUCTION. Pacal High Tensile Steel Bolts, Bulletin No. 600. Paper, Calmenson & Co., Dept. 611, St. Paul 8, Minn. 8 pp. 10" x 6"

Advantages and economies of using high tensile steel bolts in place of rivets in assembling structural steel.

PARTITIONS. Mobilwalls. Virginia Metal Products Corp., 1112 First National Bank Building, Pittsburgh, Pa. 8 pp. 8½" x 11"

Illustrated details on flush and semiflush-type steel partitions, panel and industrial type partitions, movable partitions, and wainscot. A steel tile acoustical ceiling is also pictured and described.

STEEL DOORS. VMP Steel Doors and Frames. Virginia Metal Products Corp., 1112 First National Bank Building, Pittsburgh, Pa. 8 pp. 8½" x 11"

Detail drawings and descriptions of steel doors and frames, single-swing and double-acting doors, sliding door and units, fire doors, as well as door units engineered for use with the VMP partition system.

PARTITIONS. Studless Metal Lath and Plaster 2" Solid Partition. Technical Bulletin No. 2. Metal Lath Manufacturers Assn., Engineers Building, Cleveland 14, Ohio. 4 pp. 8½" x 11"

Specifications and instructions for building 2" studless metal lath and plaster partitions carrying a 1 hr. fire rating.

TUBING. Spiratube-A and R, Catalogue C2-4. Flexible Tubing Corp., Guilford, Conn. 8 pp. 8½" x 11"

Reinforced fabric tubing for ventilation, fume and dust removal, and materials handling. The highly flexible lightweight duct is made of helical coils of spring wire wound with plies of coated fabric.

LIGHTWEIGHT AGGREGATES. Fireproofing with Perlite. Perlite Institute, 10 E. 40th St., New York 16, N. Y. 8 pp. 8½" x 11"

Summarizes basic details of 32 approved fire retardent constructions using lightweight plaster and concrete made with perlite aggregate. Diagrams illustrate required thickness of perlite plaster or concrete, furring details, and other elements necessary for listed fire ratings.

PLYWOOD. Met-L-Wood, Bulletin 521. Met-L-Wood Corp., 6755 W. 65th St., Chicago 38, Ill. 16 pp. 8½" x 11"

How metal is bonded to plywood to make *Met-L-Wood* and how and where it is used. Suggested applications include X-ray room wall panels, escalator panels and gangways.

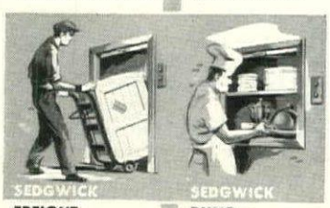
lifting loads for 60 years

SEDGWICK vertical transportation equipment has been specified by three generations of architects — to move loads from floor to floor—to make better use of space — to give one-floor convenience in dwellings. Sedgwick safety, dependability and economy are the result of six decades of technical improvement.



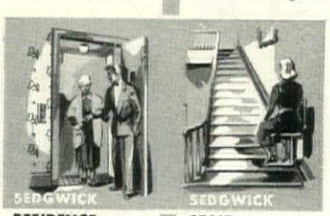
CORRESPONDENCE LIFTS for high-speed transmission of letters, orders, other light loads. Also parcel lifts for heavier loads.

SIDEWALK ELEVATORS dependable transportation of loads to and from basement. Standard capacity up to 2500 lbs.



FREIGHT-WAITERS for loads too heavy for dumb waiters, yet not heavy enough for expensive freight elevators.

DUMB WAITERS for industry, hospitals, hotels, restaurants, schools, banks, stores, etc. Under-counter or regular.



RESIDENCE ELEVATORS often recommended by physicians. A basic consideration in remodeling older dwellings.

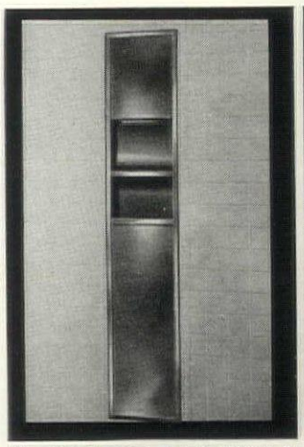
STAIR-TRAVELORS a safe, economical way to avoid stair climbing. Widely used in homes with straight stairways.

when there's more than one floor . . . think of

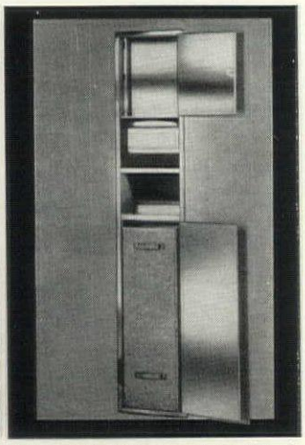
Sedgwick

For free specification service and engineering recommendations, write:

SEDGWICK MACHINE WORKS
140 W. 15th ST., NEW YORK 11, N. Y.



No. 945 Recessed Towel Cabinet & Waste Receptacle...fabricated of stainless steel . . . designed for efficiency.



Removable waste receptacle. Towel compartment dispenses approximately 400 "C" type folded towels.

For *really* modern washrooms—

the Scott No. 945 Recessed Towel Cabinet and Waste Receptacle

Here's the fixture designed specifically to meet today's growing trend to recess fixtures.

For a detailed dimension and installation drawing of the No. 945 fixture or for the help of a trained Scott consultant, write Washroom Advisory Service, Dept. MD-2, Scott Paper Company, Chester, Penn.

SCOTT

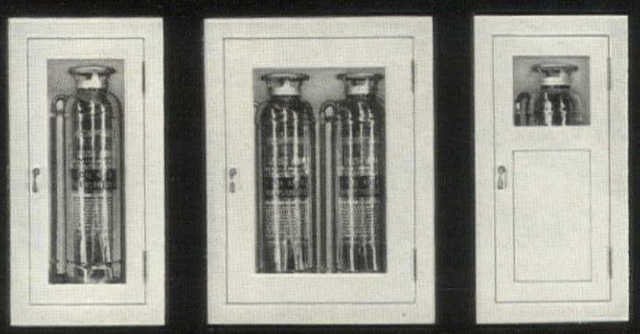
Symbol of Modern Washrooms

Trade Mark "Washroom Advisory Service" Reg. U. S. Pat. Off.

for Appearance, *for* Lower Maintenance, *for* Emergency Reliability

ALLENCO

FIRE EXTINGUISHER CABINETS



Recessed or Outside Wall Types — 36 Models — 4 Sizes

Cabinet-enclosed extinguishers look better, wear better, discourage tampering and personal injury. And you'll find the best in ALLENCO —voted *first* in interior fire protection by architects, engineers, distributors and contractors.



See SWEET'S . . . write for nearest consulting office and A. I. A. file 29e2

Established 1887

W. D. ALLEN *Manufacturing Co.*

CHICAGO 6 • NEW YORK 7

beautiful Wall-Tex is easy to hang, easy to maintain!

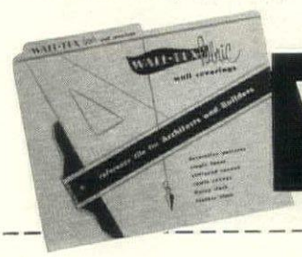


Mt. Sinai Hospital, New York, decorated with Wall-Tex.

pre-trimmed, 24 inches wide

They wanted *fabric* — and over 4000 rolls of Wall-Tex were used, in colors and designs specially suited for this installation. Wherever used, Wall-Tex is an investment in long-lasting beauty. Staff decorators like the new pre-trimmed Wall-Tex because they can hang it fast and expertly, reducing time and cost of decorating. Maintenance is easy because Wall-Tex can be washed like a painted wall. Actually Wall-Tex is paint on fabric — oil colors are *baked on* and far more durable than paint *brushed on*.

Control of plaster cracks is another Wall-Tex advantage. The fabric is strong, protects old or new walls, strengthens any type wall. Mail coupon for free File Folder and Wall-Tex swatches.



WALL·TEX

fabric wall coverings

Guaranteed by Good Housekeeping

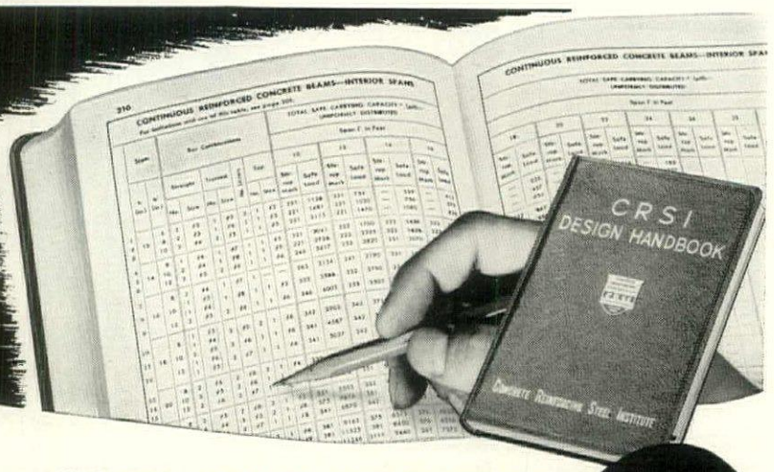
Columbus Coated Fabrics Corporation
Dept. AF-23, Columbus, Ohio
Send your new File Folder on Wall-Tex and Sample Swatches.

Name_____

Street_____

City_____ State_____

HOW TO DESIGN A REINFORCED CONCRETE MEMBER IN 30 SECONDS



NEW CRSI DESIGN HANDBOOK . . . HAS THOUSANDS OF FINISHED DESIGNS ALL WORKED OUT!

412 PAGES
$5.00

Now it takes only a few seconds to design a reinforced concrete member! No more laborious algebraic formulas and calculations. The CRSI Design Handbook has the answer to any finished design problem. You simply locate the table covering the member you are designing, apply span and load requirements, then *read off directly* exact concrete dimensions and reinforcing steel data. It's that easy. The latest building codes and engineering practices are followed.

Prepared under the direction of the Committee on Engineering Practice
CONCRETE REINFORCING STEEL INSTITUTE

SEND FOR YOUR COPY . . . TODAY!

CONCRETE REINFORCING STEEL INSTITUTE
38 South Dearborn St., Chicago 3, Ill.

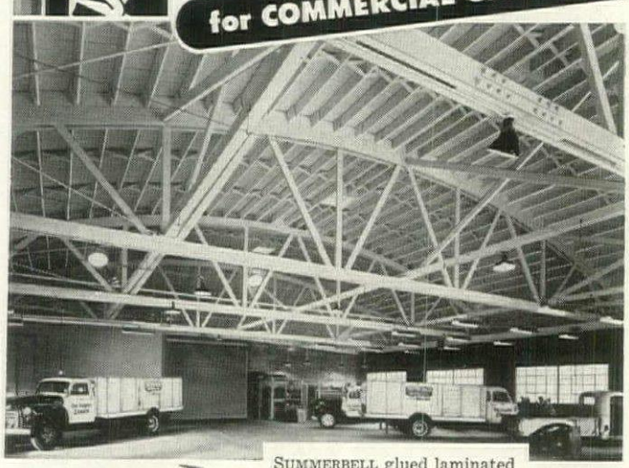
I am enclosing $5.00. Please send me a copy of "CRSI Design Handbook." If not completely satisfied, I will return the book within ten days for a full refund. (No C. O. D. orders accepted.)

NAME_____

ADDRESS_____

CITY_____ STATE_____

Summerbell for COMMERCIAL GARAGES



MAINTENANCE GARAGE, LOS ANGELES TIMES
Holmes & Narver, Architects and Structural Engineers
P. J. Walker, General Contractor

GLUED LAMINATED CONSTRUCTION
SUMMERBELL BOWSTRING TRUSSES
LAMELLA ROOFS
ALL TYPES OF TIMBER STRUCTURES

SUMMERBELL glued laminated Arches and SUMMERBELL Bowstring Trusses provide spans of any desired width and eliminate the need for supporting columns which obstruct floor area. Specify SUMMERBELL for quality, dependability, lasting satisfaction...on every job.

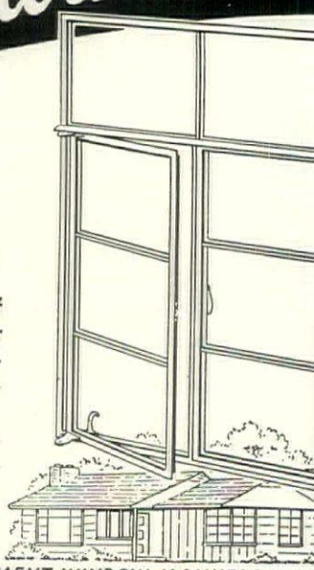
For quality, economy and satisfaction, specify SUMMERBELL

Summerbell ROOF STRUCTURES

825 EAST 29TH STREET • BOX 218, STATION "K" • LOS ANGELES 11

LEMCO Steel AND Aluminum Casement Windows

offer
PLUS VALUE
IN RESIDENTIAL AND APARTMENT CONSTRUCTION



Low original cost plus economy of installation and continuing owner satisfaction make LEMCO Casement windows the choice of builders throughout the country.
Plan to use these high-value, low-cost windows in your next building project.

WRITE FOR DESCRIPTIVE FOLDERS

AMERICA'S OLDEST CASEMENT WINDOW MANUFACTURER

Croft STEEL PRODUCTS, INC.

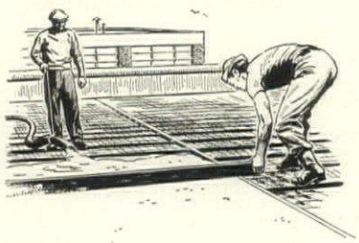
16 MARKET STREET • JAMESTOWN, N.Y.

2 Top Roof Decks

*Contact local Certain-teed Sales Office for the name of your nearest authorized applicator.

From your Top roofing source— Certain-teed

METRO-MIX®



Poured-in-place gypsum deck—installed by authorized gypsum roof deck contractors*

GYPSTEEL PLANK®



A precast gypsum deck reinforced with steel mesh and edging—tongued and grooved for added strength

Either choice is a sound one when you choose between Metro-Mix and Gypsteel Plank roof decks.

Both are gypsum products—they can't burn!

Both are light, strong, flexible in application.

Both are quickly and easily applied—hence highly economical to use.

And both are made by a top manufacturer of roofing: *Certain-teed!*

On your next roof specification job, make the wise choice. Specify *Certain-teed* Metro-Mix or Gypsteel Plank. Write now for brochures giving complete information.

see our CATALOG in SWEET'S FILE ARCHITECTURAL

Certain-teed BUILDING PRODUCTS

Certain-teed

REG. U.S. PAT. OFF.

Quality made Certain... Satisfaction Guaranteed

CERTAIN-TEED PRODUCTS CORPORATION

118 E. LANCASTER AVE., ARDMORE, PENNSYLVANIA

EXPORT DEPARTMENT: 100 East 42nd Street, New York 17, N.Y.

ASPHALT ROOFING • SHINGLES • SIDINGS

ASBESTOS CEMENT ROOFING AND SIDING SHINGLES

GYPSUM PLASTER • LATH • WALLBOARD • SHEATHING

ACOUSTICAL TILE • INSULATION • FIBERBOARD

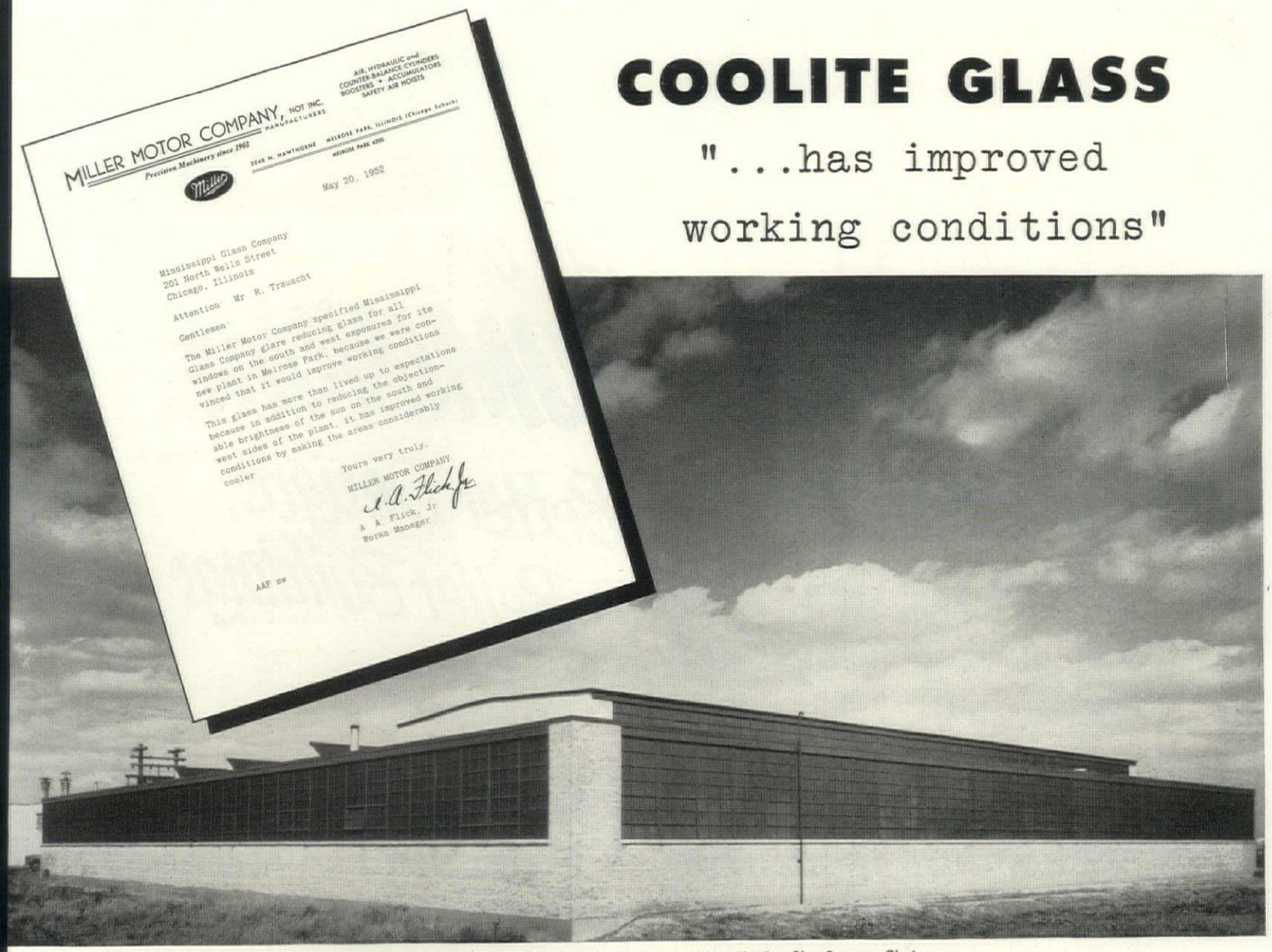
Advertisers index:

Page:	
210	Alberene Stone Corporation
15	Allegheny Ludlum Steel Corporation
215	Allen Manufacturing Co., W. D.
175	Allied Structural Steel Companies
96	Alumiline Corporation, The
34, 35	Aluminum Window Manufacturers Association
30, 31	American Air Filter Company, Inc. (*Herman Nelson Division*)
197	American Brass Company, The
33	American District Steam Co.
194, 195	American Hardware Corp., The (*P. and F. Corbin Division*)
72, 73	American Hardware Corp., The (*Russell & Erwin Division*)
78	American Lumber & Treating Co.
28	American Radiator & Standard Sanitary Corporation
87	Anemostat Corporation of America
40, 86	Armstrong Cork Company
19	Auth Electric Company, Inc.
92, A, B, C, D	Auto-Lok Aluminum Awning Windows (*Ludman Corporation*)
164	Automatic Sprinkler Corp. of America
Cover II	Bakelite Company, Division of Union Carbide and Carbon Corporation
168	Buffalo Forge Company
46	Carrier Corporation
23	Ceco Steel Products Corporation
8, 55	Celotex Corporation, The
217	Certain-teed Products Corporation
205	Chase Brass & Copper Co.
193	Cleaver-Brooks Company
174	Clow, James B., & Sons
215	Columbus Coated Fabrics Corporation
216	Concrete Reinforcing Steel Institute
71	Connor, W. B., Engineering Corporation
194, 195	Corbin Division, P. & F. (*The American Hardware Corporation*)
206	Corning Glass Works
92	Couch, S. H., Company, Inc.
50	Crittall Inc.
216	Croft Steel Products, Inc.
88	Crossett Lumber Company
186, 187	Day-Brite Lighting, Inc.
163, 165, 167, 169	Detroit Steel Products Company
26, 27	Douglas Fir Plywood Association
66	Dur-O-Wal
Cover III	Eljer Co.
66	Fedders-Quigan Corp.
210	Federal Seaboard Terra Cotta Corporation
82	Fiat Metal Manufacturing Company
207	Flexicore Co., Inc., The
173	Flynn, Michael, Manufacturing Company
203	Formica Company, The
10	Frigidaire Division (*General Motors Corporation*)
207	Gate City Sash & Door Co.
172	General Air Conditioning Corp.
100	General Electric Company
10	General Motors Corporation (*Frigidaire Division*)
9	General Motors Corp. (*Rochester Products Division*)
162	Globe Automatic Sprinkler Co.
2	Goodyear Tire & Rubber Co.
206	Gotham Lighting Corporation
90	Great Lakes Carbon Corporation
179	Grinnell Company, Inc.
63	Gustin-Bacon Manufacturing Company
208	Guth Company, Edwin F., The
190	Haertel, W. J. & Co.
1	Hauserman, E. F., Company, The
202	Haws Drinking Faucet Co.
202	Hendrick Manufacturing Company
189	Horn, A. C., Company, Inc.
209	I-T-E Circuit Breaker Co.
184	International Steel Company
204	J. G. Furniture Company, Inc.
198	Jenn-Air Products Company
16, 171	Johns-Manville
210	Josam Mfg. Co.
79	Kalistron, Inc. (*U. S. Plywood Corp*)
60	Keasbey & Mattison Company
93	Larsen Products Corp.
29	Leader Electric Manufacturing Corporation
7	Lees, James and Sons Company
180	Lewis Asphalt Engineering Co.
98, 99	Libbey-Owens-Ford Glass Company
22	Lightolier Company, Inc., The
200	Litecraft Manufacturing Corporation

Page:	
212	Lockwood Hardware Manufacturing Company
207	Loomis Machine Co.
75	Louisville Cement Company, Inc.
92, A, B, C, D	Ludman Corporation (*Auto-Lok Aluminum Awning Windou*
181	Macomber Incorporated
24	Mahon, R. C., Company, The
188	Marlo Coil Co.
65	Mengel Company, The
177	Miami Window Corp.
176	Miller Company, The
68, 69	Minneapolis-Honeywell Regulator Company
219	Mississippi Glass Company
84	Multi-Vent Division (*The Pyle-National Company*)
80, 81	National Electric Products Corporation
56	National Garages, Inc.
185	National Gypsum Company
30, 31	Nelson, Herman, Division of American Air Filter Compa Inc.
61	Nesbit, John J., Inc.
17	Otis Elevator Company
Cover IV	Overhead Door Corporation
67	Overly Manufacturing Company
4	Petro Division
5	Pittsburgh Corning Corporation
191	Pittsburgh Plate Glass Company
182	Porete Mfg. Co.
37	Portland Cement Association
76, 77	Powers Regulator Co., The
84	Pyle-National Company, The (*Multi-Vent Division*)
85	Raymond Concrete Pile Company
211	Raynor Mfg. Co.
220	Reynolds Metals Company
206	Rigidized Metals Corporation
166	Rilco Laminated Products, Inc.
74	Robertson, H. H., Company
9	Rochester Products Division (*General Motors Corp.*)
62	Roddis Plywood Corp.
161	Rowe Manufacturing Co.
14	Ruberoid Company, The
72, 73	Russell & Erwin Div. (*The American Hardware Corp.*)
38, 39	Sanymetal Products Co., Inc., The
215	Scott Paper Company
196	Seaporcel Metals, Inc.
214	Sedgwick Machine Works, Inc.
54	Sellers Engineering Co.
6	Servel, Inc.
201	Sharon Steel Corporation
211	Sisalkraft Co., The
18	Sloan Valve Company
202	Smithcraft Lighting Division
58	Standard Dry Wall Products, Inc.
70	Stanley Works, The
216	Summerbell Roof Structures
32	Swedish Crucible Steel Company
91	Titus Manufacturing Corp.
12, 13	Trane Company, The
203	Tremco Manufacturing Co., The
97	Truscon Steel Company
202	Tyler Fixture Corp.
Cover II	Union Carbide and Carbon Corporation (*Bakelite Company Division*)
20, 21	United States Gypsum
44, 94, 95, 199	United States Plywood Corporation
79	U. S. Plywood Corp. (*Kalistron, Inc.*)
198	United Steel Fabricators, Inc.
178, 203	Unit Structures, Inc.
213	Unistrut Products Company
183	Universal Corporation
59	Uvalde Rock Asphalt Company
48	Walworth Company
83	Wasco Flashing Company
64	Wash Racks, Inc.
36	West Coast Lumbermen's Association
52, 57	Westinghouse Electric Corporation
198	Wiley, R & W, Inc.
170	Will-Burt Company, The
214	Wiremold Company, The
89	Woodall Industries, Inc.
25	Young Radiator Company
11	Zurn, J. A., Mfg. Co.

COOLITE GLASS

"...has improved working conditions"



Miller Motor Company, Melrose Park, Illinois. John S. Cromelin, Architect, Hamilton Glass Company, Glazier.

Manufacturer of Air and Hydraulic Equipment Selects COOLITE GLASS by Mississippi to Cut Raw Sun Glare and Heat

Modern management knows that workers who see better, produce better . . . and this testimonial from a user of Coolite, the Heat Absorbing, Glare Reducing Glass by Mississippi, highlights the importance of "visioneering" in a modern plant. Coolite traps and absorbs much of the sun's heat—helps keep interiors comfortably cool. Coolite also filters out annoying glare, floods work areas with pleasantly tinted, softened, filtered light that cuts costly eye fatigue.

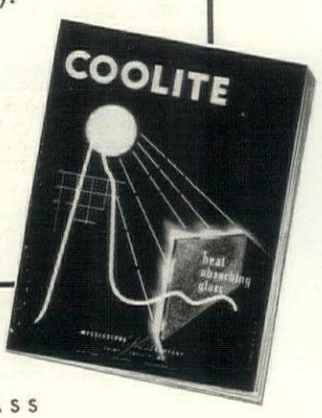
Natural illumination helps reduce operating costs—and Coolite is easy to maintain, eliminates need for painting or makeshift blinds.

Translucent, light diffusing, figured and wired glass by Mississippi is "visioneered" for better daylight illumination. Available in a wide variety of patterns and surface finishes, all scientifically designed to distribute light to best advantage.

SEE HOW COOLITE CAN SAVE MONEY FOR YOUR CLIENTS

In your plans for new industrial buildings or the modernization of existing ones, it will pay you to find out how Coolite can provide increased efficiency and economy. The cool, blue-green color of Coolite adds a modern note to any exterior. Coolite's filtered light boosts employee morale, reduces rejects. See your nearby Mississippi Glass distributor today.

Send for free Coolite Catalog, "Coolite Heat Absorbing and Glare Reducing Glass." Samples on request. See our catalog in Architectural File or write for copy.



MISSISSIPPI Glass COMPANY

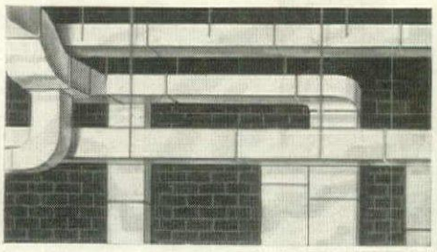
88 ANGELICA ST. SAINT LOUIS 7, MO.

NEW YORK • CHICAGO • FULLERTON, CALIF.

WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

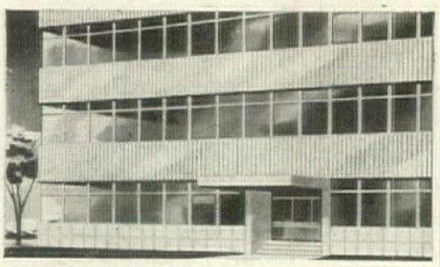
Architectural Service

Better Ductwork



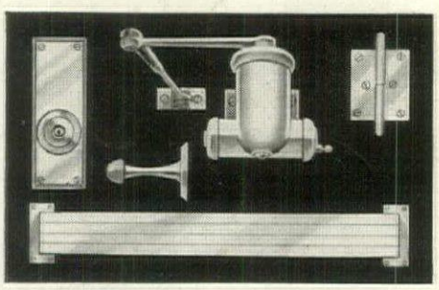
It's smart to specify aluminum for ductwork because, at one-third the weight of other metals, aluminum cuts tons from added weight to reduce structural loads. Aluminum will not rust from condensation in cooling systems. Aluminum also is a natural insulator. Non-sparking aluminum also is ideally suited to the removal of inflammable and explosive dust and fumes in industrial installations. And, with all of these advantages, aluminum ductwork installation is easier—usually costs less, particularly when handling larger sections.

Curtain Walls and Spandrels



Corrosion-resistant aluminum curtain walls and spandrels retain their attractiveness for years and years. Lightweight for minimum building load and easy handling of large sections; choice of sheet, extruded or cast designs; corrosion-resistance and freedom from destructive rust; high heat reflection; and the wide range of durable, decorative finishes all make aluminum the material of first consideration for curtain walls and spandrels. Here again, aluminum's unlimited flexibility complements the design skill of experienced architects.

Attractive Hardware



Aluminum hardware completes the white metal theme in modern design. Like other aluminum trim, the natural color of aluminum hardware, in a wide range of finishes, harmonizes with all decorative schemes. Aluminum hardware won't rust or corrode —stays bright and attractive. A full line of aluminum hardware—closers, escutcheons, knobs, strike plates, push bars, kick plates, hinges, stops—is available. Write to Reynolds for list of aluminum hardware manufacturers and for information on any other architectural aluminum applications.



Let Reynolds Architectural Service Help You Get the Most from Aluminum

Buildings that begin on your drafting board are sure to be *better* buildings if your plans include attractive, corrosion resistant, strong, lightweight aluminum . . . the modern metal that complements modern designs.

To get the maximum advantage of aluminum's design flexibility and other unique characteristics, make use of Reynolds Architectural Service. This service is available to aid you in solving special design problems. It's Reynolds way of saying: "Here's help toward getting the very most from aluminum."

Be sure to consider the benefits of standard aluminum products in your planning, too. A variety of aluminum windows, doors, hardware, light fixtures, awnings, insulation are made from Reynolds Aluminum by other manufacturers. These concerns have learned to rely on the high quality of Reynolds complete line of aluminum mill products—extruded shapes and tubing, structurals, sheet, wire, rod and bar. And remember—*aluminum is the only mass-produced metal that costs no more today than before World War II.*

For complete architectural aluminum information, call the Reynolds office listed under "Aluminum" in your classified directory or write direct.

NEW DESIGN FOLIO

Send for your copy of the completely revised Reynolds Architectural Folio. A complete, up-to-date kit on architectural aluminum. In loose-leaf form with drawings for direct tracing. Free when requested on business letterhead. Write to **Reynolds Metals Company, 2528 S. Third St., Louisville 1, Ky.**



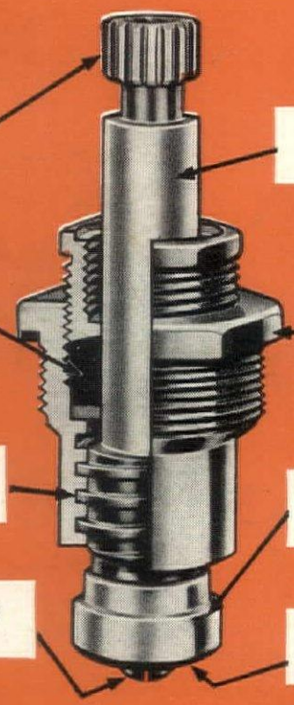
REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND



TWO RENEWABLE UNITS

Will Fit a Trainload of ELJER Fixtures



CUT MAINTENANCE COSTS

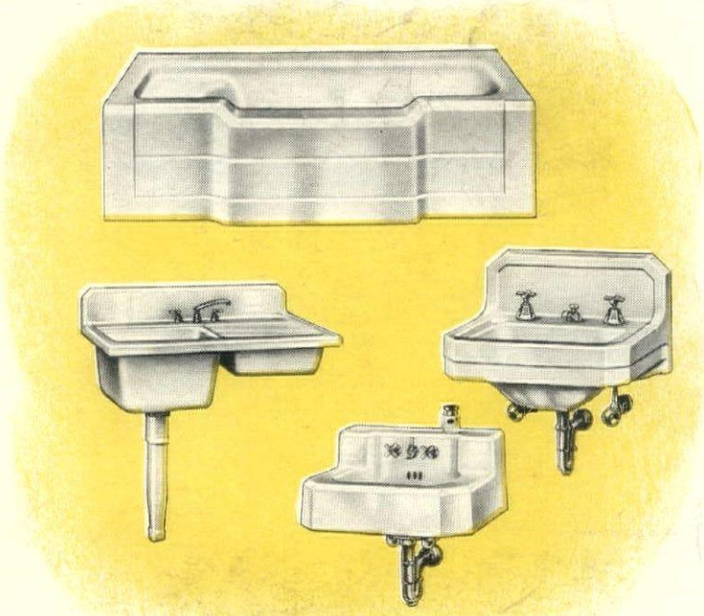
3 WAYS!

Because of their simple, efficient Renewable Units, Eljer Faucets offer distinct advantages to the user. Manufactured of top-quality brass to rigid specifications and tolerances, these units help cut costs three ways:

MINIMUM REPLACEMENT OF WASHERS AND SEATS . . . Eljer's exclusive Swivel Disc feature virtually eliminates dripping faucets because it prevents wear and tear on seat and washer. The valve can be closed tightly with only slight pressure on the handle. The Result: longer life and trouble-free service.

EASILY REMOVABLE . . . Eljer Renewable Units can be removed from the faucets quickly and without disturbing fixtures and walls. In addition, renewable seats can be removed without special tools. The Result: substantial savings in maintenance man power.

INTERCHANGEABILITY . . . Two units will fit a trainload of Eljer Fixtures. One is for concealed, the other for exposed fittings. Parts are also standardized and simplified and easily interchangeable: The Result: lower replacement costs and less waste.

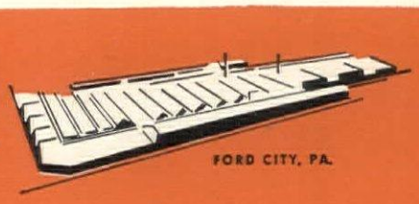


A Complete Line of Quality Fixtures

Eljer manufactures a complete line of Fixtures for both home and industry. Sweet's Files contain Eljer's Condensed Catalog of popular plumbing fixtures. For complete data write: Eljer Co., Specifications Department, Box 192, Ford City, Penna.

For your copy of Eljer's New Brass Parts Catalog write Eljer Co., Box 192, Ford City, Pa.

ELJER

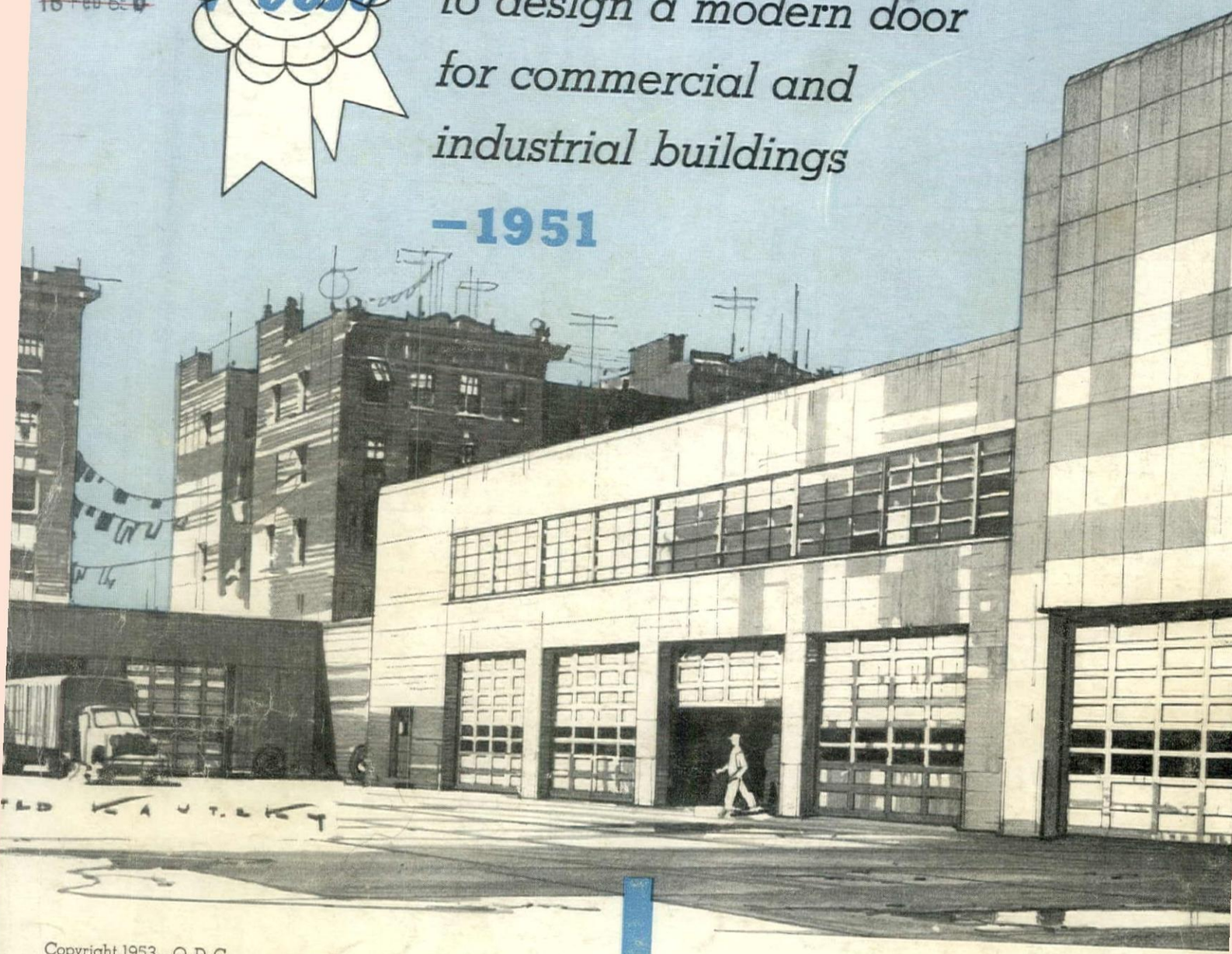






Ap 11 '55
Ap 11 '53
18 Feb'65 0
13 Mar 1957
20 Mar 1957

First to design a modern door for commercial and industrial buildings —1951



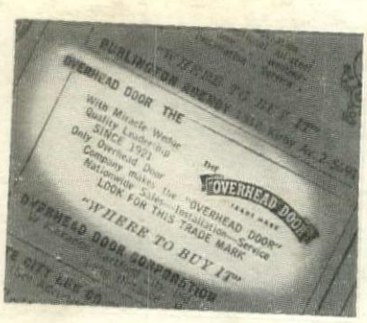
Copyright 1953—O. D. C.



True beauty, *plus easy operation*—is the key to home owner satisfaction. Specify The "OVERHEAD DOOR" for every home.

Look for this trade mark in the yellow pages of your telephone directory. It stands for—

More Than 30 Years of Quality and Leadership!



Rapid advancements in commercial and industrial architecture called for a new and modern design of The "OVERHEAD DOOR" to blend with the appearance of these structures.

True to tradition, our engineers produced a door with narrow sections and wide horizontal panels . . . with the same structural strength and the same *blue-ribbon performance*, always!

Overhead Door Corporation • Hartford City, Indiana

Manufacturing Divisions

Hillside, New Jersey — Cortland, New York — Lewistown, Pennsylvania

Nashua, New Hampshire — Dallas, Texas — Oklahoma City, Oklahoma

Portland, Oregon — Glendale, California

THE "OVERHEAD DOOR"
TRADE MARK